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ORIGINAL ARTICLES

GALL-STONE DISEASE.*

ADDRESS OF THE CHAIRMAN, SURGICAL SECTION.
BY WILSON CUNNINGHAM, B. S., M. D., F. A. C. S.,
PLATTEVILLE, WIS.

Experience and knowledge of pathological conditions has taught that the early diagnosis and early operation for gall-stone disease is of the greatest importance to the individual affected. Not many years ago, a time we can all remember, appendicitis was a condition purely for the internest; then came the questionable stage as to whether it was a disease for medical treatment or surgical treatment. Now it is generally conceded that it is a disease demanding surgical intervention. Likewise gall-stone disease, though with procrastination, disastrous results may be more delayed, is now accepted as a surgical condition As is stated by Nuesser (7) "The surgeon's word carries the weight of authority and almost identifies an early operation with a radical cure."

We have been taught there were "innocent gall-stones"—gall-stones without symptoms, and that we did not become aware of their presence until post-mortem examination revealed their presence. As is stated by Mayo (1) "complications arose and Nature hung out the yellow flag of jaundice" before a positive diagnosis was made.

The pathology of the early stages of gall-stone disease has been demonstrated to us by operative interference; mostly while operating for other troubles, until the diagnosis of gall-stone disease is now positively made where formerly it was not even considered, or if a diagnosis was given at all, it was one of dyspepsia or of stomach trouble.

There are certain conditions necessary for the formation of gall-stones.

FIRST—An infection is necessary for the production of cholesterin and the lime salts, the principal ingredients of gall-stones.

SECOND—There is necessary an interference with the proper drainage of the bile and a concentrated bile with high cholesterol content.

These conditions are demonstrated frequently after operations with drainage of the gall bladder for gall-stones and cholecystitis. Where there is an inflammatory obstruction of the common duct after the removal of the stones from the duct and gall bladder, and with a septic and inflammatory condition of the gall bladder and gall ducts, the bile that drains will be loaded with cholesterin and lime salts which form a thick deposit on the drainage bottle or receptacle used to receive the bile.

The true etiology of gall-stone formation has been very definitely demonstrated by Rosenow (16) to be due to the action of bacteria carried by the blood stream and deposited in the walls of the gall bladder or ducts where an inflammatory condition is produced. The infection may be carried from a small local focus primary in the mouth or elsewhere, or may be secondary to a deposit in the appendix or other organ. The infection frequently is due to a bacteriemia which may be of the colon group, including the typhoid bacillus, or it may be due to one of other varieties.

With a bacterial invasion of the gall bladder walls sufficient to produce an inflammatory condition of the mucous membrane, there is a destruction of the epithelial cells with an immediate increase of cholesterin and the calcium salts of bilirubin and biliverdin. With the crystallization and precipitation of the cholesterin about a debris of epithelial cells, together with the germs of whatever variety may be present, we have the nucleus of a gall-stone, which may be added to indefinitely and constantly, or intermittently as the inflammatory condition continues or subsides and again recurs.

The laboratory of Dr. Walsh has demonstrated the presence of the typhoid bacillus even years after an attack of typhoid fever.

The color of gall-stones is usually brown, greenish-yellow, or blackish, though calculi of cholester-

*Address of the chairman of the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

in without the bile pigments, bilirubin or biliverdin are of a whitish color.

The component parts of a gall-stone are chiefly crystalline or amorphous cholesterin, the coloring matters of the bile, and calcareous salts. Cholesterin and chalk are normally about 2%, or a small percentage as compared with the other elements of bile, while they form about 70%, or the chief constituent parts of the caculus. (10).

Gall-stones vary greatly in number and size. There may be but one or two stones or there may be several hundred. When there are but one or two they are usually large, as large as an almond or larger. When there is more than one stone, they are usually facceted where they come in contact with each other, caused by the continuous rubbing together of their surfaces.

Etiology—The female sex is much more prone to the disease than the male. Most authorities give about 75% females, 25% males. Mayo (1) says about ½ of 1% would be a fair estimate of gall-stones in individuals of all ages and that 5 to 8% of women, and 2 to 4% of men have gall-stones after the age of 50. Naunyn (6) states that 90% of women with gall-stones have borne children. The general tendency to enteroptosis following pregnancy probably does much to favor the predisposition to gall-stone formation.

Age appears to be an important factor, as most patients are over 40. Strümpel (9) states that stagnation and retention of bile are favored in elderly people because of a senile weakness of the muscular fibres of the gall bladder. It is more likely to be accounted for by the fact that focal infections are much more general after the age of 40. An excessive fat and meat diet, together with insufficient bodily exercise, may be predisposing causes, as there is a striking frequency of gall-stones in obese women. (10)

Gall-stones are probably mostly formed, originally, in the gall bladder, though later in the disease, because of obstruction and infection in the cystic or common ducts, secondary stones may form in the liver ducts. There are few, if any, cases reported with hepatic duct stones without evidence that the original disease had its origin from an infection of the gall bladder or common duct.

Symptoms—The symptoms of gall-stones depend much upon the location of the stones and the complications resulting from their presence. The symptoms may be of a chronic dyspepsia, with only a possible tenderness (on deep pressure over the gall-bladder area during forced expiration or tenderness) with deep percussion by Murphy's method. These findings, together with a *careful* history, will generally lead to a proper diagnosis.

Gall-stones in the gall bladder, or obstructing the entrance to the cystic duct, with a mild or intermittent infection, give rise to a sudden attack of biliary colic. Biliary colic usually occurs a few hours after a meal, probably because at this time the gall bladder contracts to empty the bile into the intestine. Its onset is sudden with a sharp, severe pain radiating in several directions —to the pit of the stomach (epigastric); around the umbilicus; to the right hypochondriac region; to the right shoulder; to the lower extremity of the scapula on the same side (scapular point). The pain never radiates downward.

The pain rapidly becomes severe and may be continuous or intermittent, and lasts from 6 to 12 hours, though it may last for several days. The colic is usually not accompanied by fever and with but slight increase in the pulse rate, and is usually accompanied by vomiting, which may be mucus, from the stomach, or biliary if there is regurgitation from the duodenum into the stomach. There may be vomiting only upon cessation of the pain. When the stone has gone back into the gall bladder the colic suddenly ceases, in which case it has been an "unsuccessful attack," or a "successful attack" if the stone has gone on through the cystic, and common ducts into the duodenum. Following an attack, there is an increased flow of urine, tenderness of the gall bladder region, and enlargement of the liver, if it has been a long continued attack. There is no jaundice. The pain is frequently called "gastralgia."

It is usually possible to differentiate from appendicitis. In appendiceal colic, the pain is referred to a lower position in the abdomen, to the unbilicus, or to the right iliac fossa, and there is usually rigidity and tenderness over the base of the appendix. With kidney stone there will be tenderness on tapping of the twelfth rib, or tenderness just below the twelfth rib on point pressure towards the kidney; the radiation of pain in renal colic is also downward into the groin along the course of the ureter, into the testicle, thigh or perineum. The operative treatment in these cases

is usually cholecystotomy, though many operators believe that even with this condition a cholecystectomy is indicated. Judd (14) says at the Mayo Clinic, where 80% of 2,027 operations for biliary disease were cholecystectomies, "the gall bladder is removed routinely in preference to the drainage operation because there is definite evidence that recurrence of trouble is less likely."

With a gall-stone impacted in the pelvis of the gall bladder the attack usually begins in the same manner as the simple variety, but the pain instead of ceasing, continues until finally there is tenderness and rigidity of the upper right rectus muscle; the gall bladder becomes distended and will often become palpable as a definite and characteristic tumor below the free border of the ribs. "Cystic bladder." Constitutional symptoms will be more marked. The fever becomes 101° to 101½°, but rarely higher even though the gall bladder be filled with infective pus, as the gall bladder is freely distensible and there are few lympathic channels and lymph glands to take up the septic material. The pulse becomes but moderately increased; in a few days or weeks the tumor becomes slowly absorbed, and the gall-stones adherent or fixed in the contracted gall bladder, and the patient develops a chronic dyspepsia. In other cases, the pressure forces the stone down the cystic duct to the common duct, and when there, produces a new train of symptoms.

When the gall bladder is distended with infective material, it may rupture or fistula may burrow into the duodenum, colon, stomach, or other surrounding organs. When it is distended with sterile contents, there are usually few other symptoms than a cystic tumor. When a stone leaves the gall bladder and enters the cystic duct the symptoms of septic absorption are usually more marked than when a simple cholecystitis exists, as the lymphatics are more numerous along the cystic duct than around the gall bladder.

With impaction in the cystic duct the symptoms will depend upon whether the obstruction is complete or partial. When the obstruction is partial the bile flows intermittently. The patient will suffer from attacks of fever from time to time, which are usually accompanied with chills. There will be deep seated pain lasting for hours or days, depending upon the length of time of the obstruction. There may be a temporary, moderate degree of jaundice. When jaundice is present, the urine will be more or less stained with bile, varying in color from dark amber to that of dark beer, which can be easily demonstrated by chemical examination. If the jaundice becomes intense the stools will become gray or clay colored, the jaundice symptoms, when present from stone in the cystic duct, are due to pressure upon the common duct and is rarely complete. When the obstruction is complete the symptoms will be more severe. The temperature may be as high as 105° to 107° F. There will be constant digestive disturbances and with a contracted gall bladder the symptoms may closely simulate gastric ulcer. The intensity of the symptoms, the continuance and height of the fever, varies in these cases according to the degree of obstruction of the cystic duct, the distensibility of the gall bladder, and the severity of the accompanying cholecystitis. (8) The treatment in these cases is usually cholecystectomy. If the stone can be easily removed and without injury to the duct, and thus avoiding the danger of resultant stricture of the duct, then a cholecystotomy may be indicated, but if there is danger of a stricture or that one is already present, then a cholecystectomy is indicated. Many operators believe a cholecysectomy is always indicated with a cystic duct stone when the patient's condition will permit.

With stone in the common duct the symptoms depend partially upon the biliary obstruction and jaundice symptoms, and partially upon the localized infection and septic absorption. When the obstruction is complete the symptoms are usually very characteristic. The jaundice rapidly becomes of a marked degree, the patient suffers with a severe pain, which is paroxysmal in character, and there is a sudden rise of temperature. The fever is marked, ranging from 103° to 107° F., and is intermittent. The fever and jaundice vary according to the degree of the septic absorption and cholangitis.

The stone may remain in the distended common duct or in a divertulum without marked symptoms for years, but usually there is loss of flesh and strength, and dyspepsia. There may be attacks from time to time by the ball valve action as first described by the late Dr. Fenger, which is an alternate plugging and releasing to the flow of bile by a free stone in a distended ampulla producing varying intensity of jaundice and general symptoms from day to day. When the stone

passes on into the duodenum the symptoms subside. In about 30% of the cases (1) the symptoms subside and become quiescent for weeks or months. During this quiescent stage, as in the quiescent stage of appendicitis, is the most favorable stage for an operation upon a stone in the common duct. The mortality when operating during this stage is the least, and greatest when done during marked cholangitis and prolonged deep jaundice.

In cases where the obstruction continues absolute or where there is but a slight flow of bile around the stone, such patients become intensely jaundiced, with general annoying pruritis; they become anaemic and emaciated, with diminished or lost coagulability of the blood and subcutaneous hemorrhages may occur. If operated upon during this stage the mortality is high.

The pain of common duct obstruction is more liable to radiate toward the back and beneath the sternum than to be in the region of the gall bladder and stomach, as when the gall bladder alone is the seat of the trouble. Gall-stones in the common duct should be removed by choledochotomy and a temporary drain placed down to the site of operations.

Hepatic duct stones may be classed with common duct stones, as they are practically always accompanied by such and are secondary to them. In most cases of hepatic duct stones the origin has probably been the gall bladder or common duct, and then passed to the dilated hepatic ducts. (4) There may be some fresh stones formed in the hepatic ducts themselves, and when these stones do form they are usually very numerous, difficult to remove, and require drainage either direct, through the cystic duct, or through a well dilated Ampulla of Vater.

The essential features of a cholecystectomy, whether removing the gall bladder from above down, or from below upwards, is to isolate the cystic duct from the blood vessels, to invert the stump, and to beware of anomalies of the bile ducts. Behrend (17) found 33% of variations of the blood vessels and ducts in 62 specimens examined.

IN CONCLUSION.

Gall-stone disease is a surgical condition.

The infection is carried by the blood stream from other parts of the body.

The absence of high temperatures is due to the limited supply of lymphatics.

Cholecystectomy is the preferable operation, excepting in the simple variety, or when the patient's condition indicates a less severe operation.

The preferable time for operation is during the quiescent stage.

In operating isolate the cystic duct and beware of anomalies of the bile ducts.

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Mrs. Uppish, who had social aspirations not yet attained, decided to get a colored butler. George, a clean, well-brought up boy, applied for the position. Mrs. Uppish proceeded to make a critical examination as to George's capabilities and fitness for the position with special reference to cleanliness. She examined his head suspecting that woolly scalp might harbor pediculi capitis. She critically inspected his hands, his finger nails and his clothing. She asked him to remove his shoes; his feet were also in a sanitary condition. As he seemed to be a likely candidate she said:

"Now, George, I want to see your testimonials."

"Well, sir," said George, recounting his experience, "by this time ah had got so goldarn flustrated I couldn't stand no mo' and ah lef' that place so sudden ah fo'got mah hat; an' mo'over, ah ain't goin' back foh it neither."—*The Journal of the A. M. A.*

Doctor—"I am sorry to tell you, but this illness has left you a broken man."

Patient—"You bet I am, doc.; I got your bill this morning."

THE PREVENTION OF TRACHOMA IN MILITARY CAMPS.*

BY NELSON M. BLACK, M. D.,
MILWAUKEE, WIS.

Trachoma was a cause for rejection of applicants for enlistment in the regular army at the time war was declared against Germany, it being a contagious disease of the eye lids, resulting in marked loss of efficiency in those infected, aside from the grave danger of spreading the disease if proper precautions are not taken.

This disease is referred to in the oldest medical book on record, the Ebers Papyrus, written about 1553 B. C. Trachoma existed in Egypt in early days, but it did not become pandemic until about the middle of the 16th century, it being stated at the present time that fully 95% of the nation's population being affected. The return of Napoleon's soldiers from the Egyptian Campaign disseminated the disease throughout Europe, as 75% of them had been infected.

In the English army in 1818 more than 5,000 soldiers practically lost their sight by reason of this disease; in 1813-1819, in the Russian armies, 20,000 to 30,000 were placed on the invalid list because of it; and in the Russian armies from 1816-1839, 76,811 men were found to be its subjects; while in Belgium in 1840 one out of five men in the army was attacked (Fuchs). Although in our time such epidemics have almost ceased, with few exceptions, for instance, in Russia, and although in foreign army life the proportion of trachoma has greatly lessened, the menace of this disease remains in these circumstances most conspicuous. Puscaria, quoted by Duane, reports in 1900 that almost 16 per cent of the Roumanian army was affected.

When trachoma invaded our country is unknown, possibly during Colonial days. At the present time it is common among native Americans in southern Illinois, in the mountainous regions of eastern Tennessee, Kentucky, West Virginia and Virginia and in Oklahoma, Arkansas, Texas, Arizona and New Mexico.

It is also found to a large extent among the American Indians. The last annual report estimated 17% of Indians infected, based on a population of 194,824.

Trachoma was considered as a cause for rejection under the selective service act of May, 1917, and the regulations (Form 11 P. M. G. O.), governing the physical examinations were specific in refusing all individuals infected.

The sub-committee on Ophthalmology, General Medical Section, Council of National Defense, early in July, 1917, in a memorandum to the Surgeon General called attention to the necessity of systematic and repeated inspection of soldiers' eyes wherever segregated, also the necessity of thorough examination of the eyes of all drafted men for trachoma, especially those who came from the regions where the disease was prevalent. These precautions were emphasized and elaborated by Lt. Col. de Schweinitz in the Medical War Manual No. 3 devoted to Military Ophthalmic Surgery, which was compiled in September, 1917, and distributed throughout the Medical Department.

Mobilization of the selective service men at the various cantonments began about the middle of September and the examination boards recommended the discharge, on surgeon's certificate of disability, of all men found to have trachoma.

On November 1st, 1917, Surgeon John McMullen, U. S. P. H. S., in charge of the trachoma hospitals in eastern Kentucky and Tennessee, called the attention of Major A. T. McCormack, M. C., to the fact that many drafted men with trachoma, but otherwise physically fit, were being rejected at Camp Zachary Taylor. He volunteered his services in an attempt to save, by appropriate treatment, these men for the service. On Dec. 11, 1917, Major McCormack referred Surgeon McMullen's letter to the Surgeon General, recommending that the trachoma draft cases discovered at Camp Taylor be transferred to the Marine hospital at Louisville, Kentucky, and that the Surgeon General request the U. S. P. H. S. to assign Surgeon McMullen and the necessary assistants to that hospital for the purpose of treating these cases. The Surgeon General of the U. S. P. H. S. signified his willingness to cooperate with the medical department of the army in a letter of even date. This correspondence was referred to the Section of Ophthalmology, Surgeon General's office and returned Dec. 17, 1917, with the following endorsement: "This department, although not doubting that trachoma can be relieved and many

*Read before the Eye, Ear, Nose and Throat Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

cases cured, questions whether this can be so quickly and permanently done as to remove a menace to others taken into the service.

"It is suggested that, on invitation of the United States Public Health Service, the officer in charge of the Section of Ophthalmology, in the Surgeon General's office, be directed to proceed to the districts where trachoma is being treated by the Public Health Service, for the purpose of observing the methods and results obtained with a view of making recommendations to the Surgeon General.

"The transfer of men suffering with trachoma, already in the service, to the United States Public Health Service Hospitals for treatment, is not recommended.

"It is, however, urgently recommended that, if, in the opinion of the Surgeon General, the cure of this disease is certain and permanent, that the men drafted, but excused because of trachoma, by the exemption boards, and that those sent to the cantonments and rejected because of the disease, be turned over to the United States Public Health Service for treatment, with a view of recalling them for service, if certified as cured by the Publice Health Service.

"Further, in anticipation of the forthcoming draft, that each exemption board be instructed to retain all the men suffering from trachoma, but otherwise physically qualified, and to turn them over to the United States Public Health Service for treatment and that they be drafted after they are certified as cured by the Public Health Service."

December 2, 1917, Major, (later Colonel) Walter R. Parker was selected as a member of the board appointed by the Surgeon General for the purpose of revising the regulations for the physical examination of applicants for enlistment in the army and registrants under the Selective Service Regulations. He submitted Jan. 4, 1918, a memorandum to the Surgeon General embodying with reference to trachoma, the recommendation of the memorandum just quoted.

On January 3, 1918, Major, (later Lieut. Colonel) Nelson M. Black in charge of Section of Ophthalmology, Surgeon General's office, was ordered to accompany Surgeon McMullen on a tour of observation of the treatment of trachoma by the Public Health Service. His report was submitted to the Surgeon General on January 30, 1918, and embodied the opinion "That a majority of the cases of trachoma found in men within the selective service age are curable within a reasonable length of time, especially those cases in which the ravages of the disease have not reduced the vision of the individual below the minimum standard required for acceptance.

"In view of the conditions observed and in order that as many men as possible may be made available for service, it is recommended that all selective service men afflicted with trachoma, but otherwise physically qualified, whose vision meets with the required standard and those whose vision is below the required standard, but in whom, in the opinion of the ophthalmic surgeon of the Medical Advisory Board, there is a possibility of the vision improving under treatment be accepted by the Medical Advisory Boards.

"Further that a trachoma concentration camp be established, where these men shall be sent for treatment and training, that this camp shall be similar in administration to a National Army Cantonment or National Guard Camp, that there shall be in addition to the General Hospital at such camp a special hospital with an adequate personnel of competent ophthalmologists assigned to duty for the treatment of trachoma along the lines which have proved successful with the U. S. P. H. S., and that a competent staff of laboratory men shall be assigned this special hospital."

On February 14, 1918, as a result of the recommendation of the committee appointed in the Surgeon General's office to revise the regulations for physical examination of applicants for enlistment in the army and registrants under the selective service regulations, the manual of instructions for medical advisory boards, (O. P. M. G. Form 64) contained the following instructions relative to trachoma:

"Registrants with chronic conjunctivitis in districts where trachoma is common should be most carefully studied. If the diagnosis of trachoma can not be excluded the registrant shall be accepted for general military service in the deferred remedial group (Group B).

"Registrants with trachoma otherwise physically and mentally fit, with vision up to the standard for general military service shall be accepted for general military service in the deferred remedial group."

That trachoma subjects were being passed by the exemption and medical advisory boards and being sent to camps is evidenced by the replies received from eight cantonments to telegrams sent from the Surgeon General's office, on March 12, 1918, inquiring as to number of registrants discharged for trachoma. These telegrams were sent to camps in which divisions were being mobilized from trachoma infected districts.

Camp Upton 32.
Camp Sevier 2.
Camp Sherman 7.
Camp Bowie 5.
Camp Zachary Taylor 285.
Camp Meade 2.
Camp Beauregard 14.

No action having been taken on the recommendations made as to a site for a trachoma concentration camp, the following memorandum was sent the Surgeon General on March 18th, 1918.

MEMORANDUM FOR THE SURGEON GENERAL OF THE ARMY.

1. To make possible the necessary operative treatment, care and training of soldiers afflicted with trachoma, it is recommended that authority be requested for the utilization of the buildings and grounds at Ft. Thomas, Ky., as a trachoma concentration camp.

2. That the camp be organized under the command of an especially selected officer of the line with the necessary non-commissioned personnel to give full military training, as the treatment will in no way interfere with the training.

3. That in addition to the usual staff, there shall be assigned for duty at least four (4) specially qualified ophthalmic surgeons for care of trachoma cases.

4. All officers and enlisted men suffering with trachoma should be transferred to this camp if otherwise fit for duty. All registrants found by exemption boards to be suffering with trachoma should be inducted into the service and at once sent to this camp for treatment.

MAJOR, MEDICAL RESERVE CORPS,
In Charge of Ophthalmology.

As a result of the offer of the U. S. P. H. S. to treat cases of trachoma at Camp Zachary Taylor ten (10) cases were sent to the Marine Hospital at Louisville, Kentucky, on March 28, 1918, and operated on by Surgeon John McMullen. Five of these cases were diagnosed as true trachoma by Surgeon McMullen, Dr. I. V. L. Brown of Chicago and Major Nelson M. Black, M. R. C., U. S. A. The others were cases of conjunctivitis resembling trachoma. The five (5) cases of undoubted trachoma were operated upon and later returned to duty. The last reports available from the eye department of the base hospital at Camp Zachary Taylor are that they had not been returned for further treatment or observation.

The Adjutant General of the army had other use for Ft. Thomas and refused the use of this location for a trachoma concentration camp.

On April 15, 1918, as soon as the decision was rendered as to Ft. Thomas, another attempt was made to obtain authority for the location of a trachoma camp.

It was deemed necessary at this time, April 17, 1917, when so many important subjects were being brought to the attention of the Surgeon General to keep the question actively before him, so the following memorandum was forwarded:

MEMORANDUM FOR THE SURGEON GENERAL.

1. "It is recommended that a conference be called, at which shall be present the proper chiefs of the divisions and sections in this office, or their representatives, to consider the question of some uniform plan for the rehabilitation of soldiers having remedial defects, known as 'Group B' of the selective service registrants, in order that they may be given military training while undergoing the necessary observation and treatment.

2. "Under this group fall:

Drug habitues.
Cardio-vascular cases.
Incipient tuberculosis.
Certain forms of opthopaedic cases and trachoma.

3. "The following plan has been outlined by the Section of Ophthalmology for trachoma cases, and has been approved by the Surgeon General:

(a) "To make possible the necessary operative treatment, care and training of soldiers afflicted with trachoma, it is recommended that a concentration camp be organized under the command of an especially selected officer of the line with the necessary non-commissioned personnel to give full military training.

(b) "That in addition to the usual hospital staff, there shall be assigned to duty at least four (4) specially qualified ophthalmic surgeons for the care and treatment of the trachoma cases.

(c) "All officers and enlisted men suffering with trachoma should be transferred to this camp if otherwise fit for duty. All registrants found by exemption boards to be suffering with trachoma should be inducted into the service and at once sent to such camp for treatment."

COLONEL MUNSON.

On May 18, 1918, the following modified memorandum was sent the Surgeon General.

MEMORANDUM FOR THE SURGEON GENERAL.

1. Conjunctival disease undoubtedly trachoma, because of pannus, scar tissue, induration of tarsus and trachoma granules or bulbar conjunctiva, to be cause for rejection.

2. Conjunctival disease known as folliculosis or follicular trachoma and conjunctival disease where there is a reasonable doubt in diagnosis, not to be a cause for rejection by the local board; the man so affected to be referred to the advisory board.

3. With proper precaution and suitable accommodation and equipment the danger of admitting a trachoma case, or a "suspect" case to a base or general hospital, is practically negligible.

4. A trachoma hospital with training facilities should be established. To this hospital would be sent trachoma cases found in camps and cantonments and "suspect" cases which observation had proved to be trachomatous.

5. Should the number of cases of trachoma and trachoma suspects be sufficient in number the special hospital should be turned over to the training division to be administered as a training battalion organization.

6. The recommendation in regard to admission of trachoma cases and suspect cases are made to prevent cases of simple conjunctivitis being purposely rejected and called trachoma, thus losing a considerable number of men for military service.

T. C. LYSTER,
Colonel, Medical Corps, N. A.

On May 21, 1918, the following instructions were sent by the Surgeon General to the Commanding Officers of Base Hospitals:

From the Surgeon General, U. S. Army, to the Commanding Officer, Base Hospital.

Subject: Policy to be pursued with trachoma cases.

1. A trachoma hospital is now being considered.

2. Until otherwise ordered, cases in the service with far advanced trachoma, with pannus, scar tissue, induration of tarsus and trachoma, granules on the bulbar conjunctiva, to be S. C. Dd.

3. Cases which show rapid improvement under treatment, or in which the diagnosis is doubtful, should be retained for treatment in the base hospital with every reasonable precaution being used to avoid the possibility of contamination.

By Direction of the Surgeon General.

On June 5, 1918, a final revision of the "standards of physical examination governing the entrance to all branches of the armies of the United States" was issued through the O. P. M. G. (Form 75). In this revision trachoma fell under the classification of those who "shall be unconditionally rejected for all military service."

As a result of cases of trachoma constantly cropping up in the various camps the following suggestion was made to the Chief of the Division of Head Surgery, June 20, 1918:

MEMORANDUM FOR COLONEL PARKER.

1. It is suggested that one ophthalmic surgeon be designated as consultant in trachoma.

2. That this officer so designated be sent to Surgeon John McMullen, U. S. P. H. S., Lexington, Ky., for instruction as to the methods used by that service in the treatment of trachoma.

3. That after completion of such instruction he be sent to the various hospitals in which cases of trachoma have been reported for the purpose of observing and advising in the treatment of such cases, and demonstrating to the ophthalmic surgeons at such hospitals the method of treatment which has been successful with the U. S. P. H. S.

Previous efforts having been unavailing the following memorandum was prepared on July 5, 1918:

MEMORANDUM FOR THE SURGEON GENERAL.

1. There are at present numerous cases of trachoma, or border line cases, in the U. S. mili-

tary service at the various army concentration centers.

2. The frequent inquiries received by the Surgeon General's office as to the disposition to be made of these cases are referred to the Section of Ophthalmology, Division Surgery of the Head for answer, this largely due to the several changes as to disposition made by the Provost Marshal General's office, i. e., with the first draft all suspicious cases were referred to the special board at the base hospital, and were promptly recommended for discharge on S. C. D. if diagnosed as trachoma. Later the ophthalmic surgeons were allowed a measure of discretion in the disposition of the cases, frank cases being recommended for discharge on S. C. D. and less severe and border line cases held for treatment, but not necessarily isolated.

The present instructions are:

1. A trachoma hospital is now being considered. Until otherwise ordered, cases in the service with far advanced trachoma with pannus, scar tistue, induration of tarsus and trachoma granules on the bulbar conjunctiva, to be S. C. Dd.

2. Cases which show rapid improvement under treatment, or in which the diagnosis is doubtful, should be retained for treatment in the base hospital with every reasonable precaution being used to avoid the possibility of contamination.

3. Early in November the Section of Ophthalmology began an investigation of the trachoma question, with a view to making recommendations as to the disposition of cases found in the selective service registrants, as well as those already in service.

4. Apparently the whole crux of the trachoma problem lies in the question of an exact diagnosis of the disease, the opinion of many expert ophthalmologists being that "if a suspicious case is cleared up under treatment it is not trachoma." In other words, the diagnosis is "therapeutic." Such being the case many men will be lost to the service, unless submitted to the therapeutic test. On the other hand, the foremost authority in ophthalmology in the United States, Lieutenant Colonel G. E. de Schweinitz, Medical Corps, National Army, states in Military Ophthalmic Surgery, (Medical War Manual No. 3, Page 90, under "Prognosis") "always a tedious disease and subject to relapses and exacerbations, *trachoma is curable if properly managed,* and the improvement in prognosis has been evident since carefully applied mechanical measures and well considered operative procedures have given place to, or been associated with medicamental applications. This is notably true in the work of Dr. John McMullen (Surgeon U. S. P. H. S.) and Dr. Stuckey and many others in Kentucky. * * * The importance of the *early detection of trachoma before decided corneal complications and pronounced lid disturbances have arisen* cannot be too strongly emphasized."

5. Referring to the last paragraph in the above quotation, attention is called to the fact that with the present minimum visual requirements in the regulations for the physical examination of selective service registrants very few men will or can be accepted for service with "decided corneal complications and pronounced lid disturbances"; nevertheless, numerous cases of trachoma are found in the army and every effort should be made to retain and make them "fit" for full military duty as well as to prevent the spread of the disease.

6. In view of the fact that no uniform method of treatment for trachoma is being carried out in the military hospitals in the United States, and taking into consideration the statement made by Lieutenant Colonel de Schweinitz in the above quotation from Medical War Manual No. 3 relative to the work of Dr. John McMullen, it is recommended that the "consultant" for the Division of Surgery of the Head, (Lieutenant Colonel G. E. de Schweinitz) be directed to observe the work being done by Surgeon McMullen, for the purpose of either confirming or rejecting the recommendations made by the Chief of the Ophthalmic Section in his report of January 30th, 1918, hereto attached, relative to the method of treating trachoma by the U. S. Public Health Service.

Further, that if Lieutenant Colonel de Schweinitz concurs in the recommendations made by Lieutenant Colonel Black, and considers the method of treatment of trachoma practiced by the U. S. Public Health Service, as an improvement on, advancement in, or an addition to the classical treatment now in use, that the same be adopted by the Medical Department of the U. S. as a form of treatment.

Further, in the event of the above being authorized, that one or more qualified ophthalmologists be assigned to Surgeon McMullen for the purpose of intensive instruction in the U. S. P.

H. S. method of treating trachoma, or that the Surgeon General of the army request of the Surgeon General of the United States Public Health Service the loan of Surgeon John McMullen for the purpose of sending him to the various military concentration centers where more or less trachoma is found to treat these cases and instruct the ophthalmic surgeons stationed at such places in the U. S. P. H. S. methods of treatment.

NELSON M. BLACK,
Lieutenant Colonel, Medical Corps, N. A.
In Charge Section of Ophthalmology,
Division of Surgery of the Head.

The above memorandum resulted in the following opinion and recommendations by Lieutenant Colonel de Schweinitz, dated July 12, 1918, which were adopted as the regulations for the handling of trachoma cases in the United States Army:

"A few cases of trachoma have appeared at the various concentration centers of the U. S. military service; while in one camp only have the cases, recorded as trachoma, assumed proportions that would constitute a numerical menace, every case of trachoma must be so regarded, until it can be placed in control and under treatment. Hence:

1. "All men with undoubted chronic trachoma, pannus, scar tissue, induration of tarsus and trachoma granules on the bulbar conjunctiva as well as on the tarval conjunctiva, should be S. C. D'd., and it should be recommended that such trachoma subjects report immediately on return to their homes to the nearest health authorities, or to the officers of the Public Health Service for disposition and treatment.

2. "All men with follicular trachoma, not advanced into the stage of chronic trachoma with lesions above summarized, and therefore amenable to comparatively rapid cure, should be sent to the base hospital for treatment where every precaution to avoid the possibility of communicating the disease should be exercised.

"The treatment of these men should be undertaken by the Chief of the Subsection of Ophthalmology, of the Base Hospital, and submitted to the well recognized mechanical (surgical) operative measures, followed by medicamental application until a cure results, when they may be returned to their units.

"Should, in any instance, the treatment prove ineffective here at the end of a reasonable time, or the lesions of advancing chronic trachoma develop in spite of treatment, the subject should be S. C. D'd. as before described.

3. "All men with chronic conjunctivitis and secondary folliculosis, the so-called border line cases, should be admitted to the Base Hospital and be held for treatment as before described. To summarize: The present regulations shall remain in force, with the addition that the S. C. D'd. men shall carry with them a recommendation that they shall report or be reported to the health authorities, or the Public Health Service, and that cases admitted for treatment shall be submitted at once to approved methods of dealing with this disease, mechanical as well as medicamental."

The treatment of trachoma naturally divides itself into medicamental, mechanical, chemical and operative procedures.

Medicamental:
- Antiseptic and Slightly Astringent Lotions of
- Mercury Salts.
- Silver Salts.
- Copper Salts.
- Dichloramin-T.
- Glyceride of Tannin, etc.

Mechanical:
- Massage.
- Scraping.
- Scratching.
- Brossage or Grattage and Expression.

Under the heading of Brossage comes the procedure which has been so successful in the hands of Surgeon McMullen of the U. S. P. H. S.:

"The eyelid is inverted by means of a special forceps. Next by the use of two scalpels, one in either hand, the conjunctiva is gradually raised and the full extent of the cul-de-sac is exposed and the granulations are scarified superficially, beginning from the bottom and extending forward toward the ciliary margin. Succeeding this, in some cases, it is well to use a moderately stiff brush with bichloride solution 1 to 2,000. The next step is to use fine mesh gauze sponges, and these are rubbed over the entire affected conjunctiva until the surface is smooth and the hypertrophy and granulations have been removed. This can be determined by the reappearance of the small blood vessels to view. The operation is completed by again inverting the eyelid and thoroughly washing out of the conjunctiva all bloodclots, etc., with a

boric acid solution, followed by the instillation of two drops of a 20 per cent solution of argyrol. The after-treatment consists in cleansing the eyes, every three hours, with a boric solution and the instillation of a 20 per cent argyrol solution. This is continued for several days or until all sloughs have disappeared.

"The amount of traumatism necessary depends entirely on the individual case in hand, and the operator is guided solely by the necessity of each case. If a radical operation has been performed the eyes should be examined carefully for the next twenty-four to forty-eight hours for adhesions, and these should be broken up immediately. At the end of about one week following operation, if granulations or rough surfaces are found, these should be lightly touched with a 2 per cent solution of silver nitrate, repeated two, three, four or more times a week."

Chemical:
- Cauterization.
- X-ray.
- Radium.
- Carbon Snow.

Operative:
- Curettage.
- Simple Excision.
- Combined Excision.

This ended my connection with the trachoma situation in the U. S. army, as I was relieved from duty in the Surgeon General's office in July.

With the American Expeditionary Forces, trachoma and its control is another story. Early in July, 1918, the Medical Division of the Labor Bureau A. S. C. brought the trachoma situation to the attention of the Chief Surgeon A. E. F. by requesting that a survey of the administration labor companies be made to ascertain the amount of the disease existing and to determine upon the means of treatment and control. This work was naturally assigned to the Division of Ophthalmology. On July 6th, 1918, a cablegram from G. H. Q., A. E. F., requested that the Surgeon General send an expert in trachoma and on July 12th, 1918, I received orders for extended overseas service. I reported for duty at the headquarters of the medical and surgical consultants, Neufchateau, France, Aug. 19th, 1918, and found that Major (later Lt. Col.) Greenwood, senior consultant in Ophthalmology, A. E. F., had the work organized and the situation well in hand. Major (later Lt. Col.) Derby, assistant consultant in ophthalmology, A. E. F., had been placed in charge of the trachoma problem and too much can not be said in commendation of his activities in this capacity. As ophthalmic surgeon of the Harvard Base Hospital unit, assigned to the British Expeditionary Forces early in 1917 he had, not only the opportunity of observing the methods employed by Col. W. T. early in 1917 he had not only the opportunity of the B. E. F., but in actively assisting in the work of controlling the trachoma situation with the British forces.

In the late war hundreds of thousands of alien laborors were brought to France from North Africa, China, Portugal and Spain. The British Expeditionary Force report that 19% of the Egyptians and 9% of the Chinese had active trachoma, although serious attempts were made to eliminate those infected at the ports of embarkation.

The following is the routine employed by the British Medical Department in combating the trachoma problem and is taken from Lt. Col. Derby's report of his work in the A. E. F.:

"On the arrival of each shipload of men at Chinese headquarters, in addition to a general examination, each man had to have his lids turned and inspected. These inspections were carried out by men familiar with the disease.

"The Chinese were lined up in three or four files, according to whether three or four officers were to make the inspection, and came up in turn for the examination. Behind the examining officers sat the recorder at a table. Clean cases were immediately passed. If a conjunctivitis or trachoma case was detected, the man was detained by a non-commissioned officer, his number ascertained from his identity disk or wrist band, and it was recorded in the appropriate column of the recorder's book. The number examined was also recorded, so that there was a permanent record of all cases of disease and the men could be transferred to their proper companies.

"If the lids were healthy and there was no conjunctivitis, the man was placed in a clean or 'X company.' When conjunctivitis was discovered and no evidence of trachoma, the man was placed in a conjunctivitis or 'Y company.' Trachoma cases were put in trachoma or 'Z companies.'

Doubtful cases of trachoma were usually placed in the Y companies.

"Clean companies, under medical officers without ophthalmic experience, could be sent anywhere, so long as provision was made for occasional inspections by ophthalmic specialists. These inspections were necessary, for although directions had been sent to China not to embark infected men, yet, owing to the difficulties of obtaining coolies entirely free from the disease, a certain number of trachomatous cases came over with practically every shipment, though the number showed a very satisfactory diminution as time went on. It was impossible to hold clean men at headquarters for a sufficient length of time to rule out contagion, and therefore it was to be expected that trachoma would appear from time to time in the clean companies, as it did, since all these men were contact cases.

"The Y and Z cases were sent to places designated as 'trachoma treatment centers,' where they were under the supervision and care of an ophthalmologist.

"Colonel Lister's figures in a report sent in a few months ago show, among 100,000 Chinese, approximately 8,500 cases of acute infectious trachoma and 5,500 cases of suspicious conjunctivitis.

TREATMENT.

"As the Chimaman is prone to develop conjunctivitis, especially if working in a dusty atmosphere, Colonel Lister instituted the so-called 'universal drops' treatment for the clean companies. This consisted in dropping a solution of zinc sulphate and boric acid into the eyes of each man once a day, preferably after returning from work. The men were taught to squat down in two rows facing each other and to draw down the lower lids with the fingers. A Chinese medical orderly passed down in front of each one and instilled the drops. He was assisted by a man who passed behind the row and steadied the head of each individual. As each row was treated it was replaced by another, and the whole company was finished in about twenty minutes. The milder cases in the conjunctivitis (Y) companies were treated in the same way. In severe cases the lids were painted with silver nitrate or protargol.

"Trachoma (Z) companies had the treatment appropriate for each case—expression, silver nitrate, or the copper stick. Corneal ulcers were treated as in civil practice. An important factor in the limitation of the spread of this disease was regular sterilization of the Chinaman's towel twice a week.

"By the procedure described it was not expected that these laborers would be cured of their trachoma, but it was expected that the spread of the disease would be limited, and that their working efficiency would be raised to the highest point practicable."

The A. E. F. had in the neighborhood of 180 labor companies, varying in strength from 50 to 300. These companies were scattered all over France, from close to the front to the ports of debarkation. They had been taken over from the French, who had organized them and who had presumably inspected them for trachoma. The alien labor companies were made up of Moroccans, Tunisians, Algerians, Chinese, Indo-Chinese, Spanish, Portuguese, and other nationalities. There were also a few companies composed of French.

Colonel Derby had commenced the inspection of the companies in the Advance Zone on Aug. 7, 1918, and followed the technic used by the British, already described. The inspections could not be carried on continuously, owing to the pressure of other duties, especially the examinations of the companies in the zone of the service of supply; however, practically all the companies in the advance zone had been examined by September 3rd, 1918, when I was appointed a consultant in ophthalmology, A. E. F., and the senior consultant assigned me to assist Col. Derby in the trachoma survey here, when not otherwise actively employed.

During the St. Mihiel drive and the beginning of the Argonne offensive both Col. Derby and I were assigned duty with the advance Mobil and evacuation hospitals and the intensive work of the survey was not commenced by Col. Derby until October 10th, 1918, and was completed November 10th, 1918, the day before the Armistice was signed.

I joined him at Tours for a few days and was recalled for duties in the advance zone, but joined him again at Nantes and continued with him until the survey was finished.

The following circular letter, formulated by Col. Derby early in October, 1918, was issued by the labor bureau for the instruction of its officers and personnel:

American Expeditionary Forces,
Labor Bureau, A. S. C.
Office of Surgeon, Medical Division,
A. P. O. 717.

France, Oct. 21, 1918.

Circular No. 4—To Medical Officers Assigned to Administrative Labor Companies (through commanding Officers):

1. A survey is now being made of the Administrative Labor Companies, A. S. C., under the direction of the Medical Division, Labor Bureau, by the authority of the Chief Surgeon A. E. F., as described in Circular No. 2, Medical Division, Labor Bureau, Aug. 7, 1918. The purpose of this survey is to determine the extent of contagious eye diseases with the view of preventing infection and promoting efficiency.

2. Administrative Labor Companies, especially those composed of Chinese and Indo-Chinese, are frequently liable to two contagious eye diseases, conjunctivitis (pink eye), often in its chronic form, and trachoma.

Conjunctivitis is a contagious eye disease which spreads rapidly by contact. It is, however, readily curable under proper treatment, and suitable precautions will limit its spread.

Trachoma is likewise contagious; but, unlike conjunctivitis, it is very resistant to treatment, and in its most severe forms produces irreparable damage to the eyes and may interfere seriously with the efficiency of laborers infected. Certain early cases of trachoma are impossible to distinguish from chronic conjunctivitis until they have been for some time under observation. The spread of trachoma may be checked by suitable measures. Proper treatment will arrest its progress.

Contagion—Both diseases are conveyed from one individual to another by direct contact with secretion from the affected eyes, by personal contact, by infected towels, and by the use of the same wash basins. Cleanliness is the greatest enemy of these diseases.

Classification—The present survey will divide the laborers of each company into three classes:

Class X comprises the individuals with clean eyes.

Class Y comprises laborers with conjunctivitis. A few of these may later show trachoma.

Class Z Trachoma cases.

3. As a preventive measure in all labor companies, each man should have his individual towel and soap. Towels should be boiled for thirty minutes twice a week. The same should apply to handkerchiefs.

Class Y should be isolated so far as possible without interfering with their labor. They should live in a separate hut from Class X, or, at least, a portion of a hut should be partitioned off for their use. They should wash separately and eat separately from Class X, and should work in a squad by themselves as far as is possible.

Local treatment of Class Y need in no way interfere with their labor. An aqueous solution containing one-third of 1 per cent zinc sulphate and 2 per cent boric acid is used.

This treatment is best carried out in the following manner: At a suitable time before going to work and after returning from it, Class Y cases report for treatment. They squat down on the ground in one or more lines, pull down their lower lids and look upward. The medical orderly passes along the lines with an assistant. The assistant, who stands behind the laborer, steadies the head with his hands, the medical orderly in front instills with a dropper one or two drops of the zinc sulphate solution which he carries in a small glass. This procedure may be carried out easily without having the dropper come in contact with the eye that is being treated. An orderly may be quickly trained in this work. By this method, up to one hundred cases may be treated in fifteen minutes. After the application of zinc sulphate, the eyes will smart for from one to five minutes, but not longer.

4. Z cases will be reported by number to the Medical Division, Labor Bureau, A. P. O. 717. Orders will be issued transferring them to special trachoma companies. During the interval between the discovery to trachoma Z cases and their removal, they will be subject to the same precautions and treatment as pertains to Class Y. If due precautions, as outlined, are observed, laborers infected with conjunctivitis, X cases and trachoma Z cases may be handled without danger of infection to other laborers or troops.

W. H. Honor,
Major, M. C., U. S. Army,
Surgeon Medical Division,
Labor Bureau, A. S. C.

"Our figures show that 12,461 laborers were examined, and that among them were 1,618 cases of conjunctivitis, 13 per cent; and 261 cases of

trachoma, 2 per cent. If we separate the nationalities we find:

1. "Northern Chinese, 4,958 examined; 1,090 with conjunctivitis, 21 per cent; and 160 with trachoma, 3.2 per cent.

2. "Indo-Chinese, 1,795 examined; 284 with conjunctivitis, 16 per cent; and 44 with trachoma, 2.4 per cent.

3. "North Africans, 1,291 examined; 51 with conjunctivitis, 4 per cent; and 18 with trachoma, 1.5 per cent.

4. "Mixed, 4,417 examined; 193 with conjunctivitis, 4.3 per cent, and 38 with trachoma, 0.9 per cent.

"As noted before the North Africans showed a large percentage of healed trachoma.

"Our percentage of trachoma among the northern Chinese (3.2 per cent) is much lower than that found at first by the British (8.5 per cent), but compares well with their later shipments. This may be accounted for by the fact that a number of our Chinese companies examined had already been gone over by the French and the cases of trachoma weeded out. Several of the companies that had been previously weeded out, however, showed a number of fresh cases of trachoma and a considerable amount of conjunctivitis. As a rule, the trachoma seen among our Chinese was in an early stage. In very few cases was it disabling."

Colonel Derby's report to the Chief Surgeon and to the Labor Bureau, A. E. F., contained the following recommendations:

"Trachoma cases should be isolated in special companies. These companies should be worked in some hospital area where they can be under the supervision and care of the ophthalmic specialist. The director of the labor bureau has already ordered the formation of a trachoma company at a hospital center. Until these trachoma or Z cases could be transferred to such a company, instructions were given to include them with the Y or conjunctivitis cases.

"Conjunctivitis cases (Y) should also be put in special companies and given appropriate treatment. Until this can be carried out, the following course should be adopted, and the commanding officers of all companies have been instructed in the procedure: The men should be isolated in a separate barracks or part of a barracks. They should, as far as possible, wash separately, eat separately and work separately from the clean men. Their towels should be boiled for thirty minutes twice a week, as should handkerchiefs when in use. Local treatment consists in the administration of zinc sulphate drops (0.3 per cent) twice a day. This treatment may and should be carried out without interfering with labor.

"A detailed description of the British system of using the 'universal drops' was then given, as already quoted.

"The Y, or conjunctivitis cases, should be examined by an ophthalmic specialist every three weeks. In six weeks, it should be possible to tell which of the suspicious cases are in all probability trachoma, and measures taken accordingly. Where trachoma has existed in a company, a certain number of the X, or clean, men will later develop it, and these must be carefully watched for. Unfortunately, labor companies move so frequently that arrangements for the supervision of the Y cases will break down in many instances under this system. If alien labor companies, especially Chinese, are to be employed for any long period of time by the A. E. F., some provision for the formation of Y companies should be made.

"Clean (X) Companies—The Medical officer in charge of X companies should be on the constant lookout for fresh cases of eye disease. If these cases do not respond to treatment in a short period of time, the advice of the nearest ophthalmologist should be sought.

"It should be remembered, in considering the trachoma problem, that the ordinary methods of handling trachoma in civil life do not apply here. We were in France to help win the war, and it was our duty to help the labor authorities by every means in our power by getting every possible ounce of work out of the labor companies. The British had shown conclusively that under a well organized system the disease could be controlled and labor rendered more, rather than less, efficient. Moreover, in the busy times we faced it was impossible to occupy hospital beds with any considerable number of trachoma patients. Rather than do this, the authorities preferred to send the laborers home, and in but few instances was this necessary.

"A comparatively small number of cases of trachoma was found among our soldiers in France, and the proposal was made by the senior ophthalmic consultant to the Chief Surgeon's office that all such cases be segregated in a hospital area where they could have proper treatment and could

be used as labor. On the ground that there were not enough of them to make this procedure worth while, this suggestion was not acted on, and they were held for treatment in the various hospitals.

"The signing of the Armistice and the general let down in all departments together with the return of troops and alien labor companies prevented the Division of Ophthalmology from observing the final effects of the attempts to control the trachoma situation in the A. E. F., based on the experience of the British, whose methods had been followed and had been so helpful in organizing the means of control in the A. E. F. There is no reason to doubt the successful outcome."

DISCUSSION.

Dr. Gilbert E. Seaman: Unfortunately I did not have the advantage of practical contact with the work of the ophthalmic section of the Medical Corps, and cannot speak from any experience in that particular line of the work. The value of a paper such as Dr. Black presents is, of course, in the points that may be applicable to the control of trachoma under civil conditions.

I think it has been the experience of most of us that trachoma is becoming more common among us, particularly here in Wisconsin. I have seen, I think, during the few months that I have been back, more cases of trachoma than I had seen in any several years previous to that time. A few years ago we had an influx of immigrants from Southern Europe, and they brought trachoma with them. That trachoma is now being transmitted to others, and we find cases among people who are not of the immigrant class. I do not believe that the health authorities, either of the state or of this city, are doing all that should be done in the control of the spread of trachoma. I am not familiar with all they have done in that line, but I am sure there is not enough being done. Only recently I saw a young man, an American, who was born and raised here in Milwaukee, but who spent some time in North Dakota, and who at the present time is a farmer in Northern Wisconsin, 25 years of age, with a wife and two children, who has had trachoma for several years, and, without supervision, without adequate treatment, has practically lost his vision. He has had a decided pannus; he has had a perforation of one cornea, and has gone on to practical blindness without being in any way noticed by the health authorities, and without the proper action having been taken by the physicians with whom he has come in contact. This case would be duplicated, I am sure, many times in the experience of ophthalmologists here and elsewhere in the state. I believe this is a question that this section would do well to interest itself with in the line of the prevention of the disease, and the practical points in the matter of prevention, pointed out in Col. Black's paper, will, of course, be helpful.

Dr. A. J. Taugher: Was it usual to use a 3 per cent zinc sulphate solution while the men were working?

The Secretary: I noticed in your paper that the towels were sterilized twice a week. Do you think that was sufficient, doctor?

The Chairman: Any further discussion? If not, I will ask the doctor to close.

Dr. Nelson M. Black: I thoroughly agree with what Col. Seaman has said relative to the idea of this section formulating some suggestions to the health authorities for the prevention and control of trachoma in this state, because it undoubtedly is becoming more prevalent for some reason or other.

In reply to Dr. Taugher's question: The zinc sulphate drops were used in conjunctivitis companies; not in the trachoma companies. The classical treatment, silver, copper and various operative measures were used with the trachoma companies.

Dr. A. J. Taugher: That was 3 per cent, doctor?

Dr. Nelson M. Black: I think it was 1 per cent in 3 per cent boric acid solution.

Relative to the sterilization of towels: That was not to control the disease, but that was instituted with every company as a prophylactic measure.

The Chinese we found very cleanly individuals, bathing frequently, and washing their clothing frequently. The washing was done, as a rule, in cold water. The recommendation of Col. Derby, that all towels be sterilized, applied more especially to the "clean companies," to prevent infection. Of course, in the "trachoma companies," and the "conjunctivitis companies," the sterilization was much more frequent.

THE ROENTGEN RAY AS AN AID TO DIAGNOSIS.*

BY EUGENE A. SMITH, M. D.,

MILWAUKEE.

When the War Department of the United States called upon the Surgeon General for physicians and surgeons for service in the U. S. Army and Navy, something happened to several thousands of us that lifted us bodily and mentally out of the job of telling patients what to do, and put us down in certain places, far removed from our familiar surroundings, where we were given orders to stay and carry on.

A canvass showed that there were far too few X-ray men for the service, if all were called. So several schools for intensive training were organized, failed and were replaced by one government military school for Roentgenology at Cornell University, New York City. The course was six weeks and the faculty was picked from the leaders in this science in America. We all became students, took

*Read before the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

a thorough course in electrophysics, dissected and assembled, traced and charted all the principal types of X-ray apparatus, so that if the apparatus broke down in the field we would be able to repair it ourselves. We were then sent out for practical work in technique and diagnosis to the various New York hospitals. Every facility was offered us by the Hospital X-ray and other departments. St. Luke's, the German, Harlem, Mt. Sinai, New York, New York Eye and Ear, and many others took us in.

I had the pleasure of spending five months while awaiting sailing orders taking this course and then going through the thousands of plate records on file in the X-ray libraries of these great hospitals.

To study diagnosis one must work, but I know of no man so engaged that is not fascinated by his work. X-ray diagnosis is not new, yet there is here one of the most unexplored and richest fields in science.

I see by the program that I am down for a paper on X-ray diagnosis, but as this symposium is more or less on war stuff I have allowed this paper to be colored by the rest of the program.

I must say that the five months of thorough preparation for the field were much more enjoyable than the routine of army life abroad, where one was Officer of the Day, Detachment Commander, Mess Officer, Forester, Electrician, or anything that necessity demanded. There certainly was great satisfaction in everyone playing the game by the same rules, and we all realized quickly that if we were not governed by the same rules or orders we would have been unable, because unaccustomed, to pull together so successfully.

It is admitted that the recognition of Roentgenology by the Surgeon General of the Army and the introduction of the X-ray to several thousands of medical men, unfamiliar with its advantages, with a direct order to use it in diagnosis, put the X-ray in a place in our profession which it was too slow in gaining on its own merits alone and which position it will hold and improve. The proof of this recognition on the part of the profession is borne out by reports from the manufacturers of apparatus, that they are being swamped by orders.

There is now one step more that medical men must take and that is to recognize the fact that, unless one wishes to devote himself to Roentgenology, he will derive more honest credit and his patient more benefit if he will arrange to get his opinions from a skilled Roentgenologist. There are in this state, and in other states, laboratories run by individuals or groups of capitalists employing a raw office girl as "technician," and, these medical men trade upon the confidence of their patients by trying to interpret the X-ray plates as sent to them by these laboratories. They are not qualified to make this interpretation and the practice is as dishonest as picking pockets. The patient suffers and pays and the mistakes are charged to Roentgenology, giving the science a black eye.

In the government New York school for fracture work I am told that a large class of doctors after being trained for three weeks to read X-ray records of simple fractures, on formal examination averaged less than 2% correct diagnoses. It therefore is time that the demand for trained Roentgenologists should be urgent enough to tempt men to devote themselves to this science.

X-ray diagnosis in the army was provided for on a very liberal scale. Inasmuch as the personnel of our patients was recruited from the flower of our young men we had comparatively few cases of disease to the large number of injured. We found the watery mark of Spanish influenza in the lungs and sinuses. Especially we noted the supraorbitals were prone to fill with fluid giving the characteristic frontal pain. The men who had Flu will tell you their lungs are not yet free and the X-ray shows masses of cloudy infiltration, characterized by its extreme slowness in clearing up. This means lowered vitality in the lungs and I have an idea it will show its influence on the tuberculosis statistics of our nation during the next year or two. We found so many cases of incipient tuberculosis of the apices that our medical men said we called all lung cases sent to us tuberculosis. We believe that the reason they were surprised at the large number of diagnoses of tuberculosis is because the X-ray plate detects it before the clinician can hear or see it by his other means.

Next to the bones, the chest cavity is the most interesting to me. Of the various stages of tuberculosis each has its mark, from the golden rod or mimosa node of incipiency, always seen first at the apices, to the massive "wet snowstorm" infiltration, or the calcium plates, small and large cavities, and the great bands of resulting adhesions pulling the lungs and heart to one side or the other.

Pneumonia and pleurisy leave their mark in

thick bands and cloudy areas with a distinct water mark in the infusions.

Abscess and empyema show as dark circumscribed areas filling up a place in the lung tissue itself or rising either in a mass from the diaphragm or perched in isolation on the side of the chest wall looking like a swallow's clay nest.

In the posterior mediastinum lies the index of intoxication seen plainly in the amount of infiltrated lymphatic tissue. This may be sufficient in amount to cause pressure symptoms influencing directly the position and function of the heart, great vessels, trachea and esophagus. In this space other tumors without and within the trachea and esophagus, strictures and foreign bodies in these two later and the various pathological conditions of the spine may be observed. Roentgenology of the mediastinum, and there is no practical information to be had elsewhere on it, is simple, but has never been written.

The heart work as outlined by diagnosticians always provides for a question as to size and position, though it was proved five years ago that diagnosticians could not percuss out the true borders of the heart and that the exact size and position can easily be shown on the X-ray plate by a simple technique. Still the old means of deceiving one's self is still in vogue in the profession.

The first examination to determine the size and position of the heart as part of a regular examination for life insurance was made less than a month ago in my laboratories and the man who took it received an insurance policy that had been held up by the insurance company for nine years because their medical men thought he had a large heart. Is it not our duty to put the public right on this subject?

An interesting note to the credit of the X-ray is that the use of the ray to diagnose possible tuberculosis in a case of protracted draining empyema led to my discovery that the X-ray cures draining empyema. This was followed up and proved out in eighteen cases.

Naturally the bulk of the cases that came to our laboratories in the army were foreign body and fracture cases. We saw few dislocations. I had the pleasure of developing the Roentgenology for the American Expeditionary Force, of the maxillo-facial surgery. You will see some of these shattered jaws reproduced in the lantern slides. The sum total of our knowledge of maxillo-facial surgery has been developed during this war, with the English as leaders and the American surgeons a close second. Fractures of the long bones were diagnosed by X-ray plates and under the fluorescent screen, and the French, English and American surgeons were introduced to the setting of fractures under the fluorescent screen. The American surgeon in France as well as the French and English surgeons who saw the technique of reducing fracture while actually observing the process through the fluorescent screen took very kindly to this method which gives the only ideal results.

I could only explain the slowness of the American surgeon at home to adopt this method on the hypothesis that in the army he was watched and his records of treatment were part of his military record, whereas at home he is not closely enough watched by his patient and the profession. It is hoped that this method of reduction of fracture and dislocations will be more generally used as a result of the American surgical experience in the army.

Foreign bodies were located under the screen by a method so simple that a child could use it, and in all cases the foreign body was extracted easily if it was thought best. Foreign bodies in the chest and in some other locations were sometimes allowed to remain when it could be foretold that they would not cause trouble. We had occasion to see again the seemingly erratic course of foreign bodies after entering the body. The slightest limiting membrane may act as a directing or shunting force to deflect foreign bodies. You will observe this in the lantern slides. Then there were other eccentricities on the part of these missiles. The most comminuted fracture I have ever seen was caused by a machine gun bullet entering the left humerus at the shoulder and coming out at the elbow causing, by its explosive force, the bone to burst into countless fragments giving a result which looks like an elongated chrysanthemum. Strange to say this bone in an officer's arm recovered. I will show it to you.

The war has resulted in the production of smaller, more portable, simpler and cheaper X-ray apparatus and many more proficient Roentgenologists, for through their hands passed a multitude of all kinds of patients and no officer entered the service of his country unless he were an earnest seeker of the truth.

DISCUSSION.

Dr. Gentz Perry, Amery, Wis.: I seem to be the only unfortunate among the group who still has to wear the uniform. However, that is not saying anything against the uniform, but rather that the rest of you are out of your uniforms, and I am not. I happen to be in a position where I am having an opportunity to observe some of the end results, in some of the surgical and reconstructive operations and work. I have made a few notations here during the reading of the papers which may be of interest.

First, as to the Dakin treatment. That is a very important question and always will be, for the simple reason that quite a large part of the Dakinized work has not been correctly done. Like our friend here, Dr. Smith, I have had an opportunity to observe this work from a Roentgenological aspect, but I have not seen any curative results of the X-ray in empyema cases, and we have had an opportunity to see a very large number of chronic empyema cases. I assure you that the doctor's paper on Roentgenological work was fraught with very helpful and very wise and truthful statements, but the one particular point that I have not been able to observe is any curative effects of X-rays on the empyema conditions of the chest. After the armistice we had a very large number of empyema cases complicating, or following, influenza and pneumonia—and we are still having them. I am at the present time in charge of the X-ray department in one of the largest army hospitals. And we had there in the last few months approximately 500 cases of these chronic empyemas that have been operated on from one to a dozen times. I am sure that those of us who have had an opportunity of seeing these conditions will appreciate very fully the doctor's description of the condition of the lungs as revealed to us by the radiograph or fluoroscope, but, however, *a minute study* of the lungs should always be done *radiographically;* for a careful study of the lung conditions the radiograph is necessary. As far as a mediastinal infection goes, that, of course, is largely done fluoroscopically. The radiograph of the mediastinum is difficult and not always satisfactory. There is a large amount of infection found in the mediastinal space, following chronic infection, especially the chest infections and this is a very important factor. Now, in the hospital where I am working we have constantly cases of that nature. I saw, the day before I left to come to this association meeting, several cases operated upon by the chest surgeon there. By the way, our surgeon, Captain Sochet, who is now doing the most of that work was formerly associated with Dr. Dudley of Chicago, a very competent man. I saw three cases operated on there of mediastinal abscess, broken down glands, following, I think in each case, old empyemas. These empyema cases that we have to deal with are a very pitiable bunch, being chronic and difficult cases. Now, in this matter of Dakinizing, I would say that in our hospital group in France we had a larger number of cases both of empyema and of infected wounds; practically all of the war wounds were infected, and we tried all the various methods; we had in our group eight large hospitals, gathered from all parts of the country. There were physicians there from all parts of the world, and some very capable men among them, and I had an opportunity, as Roentgenologist of our Base Hospital No. 87, and as supervising Roentgenologist of the other base hospitals of the Justice Hospital Group, to observe the different methods, and I am sure that where the Dakinizing was carefully done we had the best results, both as to empyemas and as to the infected wounds, of any kind of treatment used, but if it is not carefully done you might just as well use boric acid solution, or any other domestic remedy.

Down at our hospital, where I am located now, we have as our chief bacteriologist there a man who has been the bacteriologist in one of the largest cities of this country for several years, a very competent man. And the staff has worked out the Dakinizing method to a very fine point, and there is not any question about the good results, if used correctly.

Now, as to the matter of the closure of wounds, the bacteriological curve, as brought out by the doctor's paper, the bacteriological curve chart, is, as far as I have been able to observe, and from the results shown, the most sensible thing to follow. But when you try to close a bacteriologically free wound, or when you pronounce a wound free from bacteria and close it, you will find, if you follow these cases through for several months, as we have, that a great majority of them come back several months later and have to be put in the hospital. Now, the radiograph pictures that we get of the infected bones, what we call "osteomyelitis" cases, are not the typical broken continuity of the surface and of the periosteum that we used to get in civil life, but rather a picture of an irregular, infected osteocartilaginous substance, and this infected condition follows in many of the bone and empyema cases that we see now—these cases were pronounced bacteriologically free, and were surgically closed. At present we have about 2,000 patients of the serious cases in our hospital—showing that the hastening of the closure of wounds, trying to hasten healing by closing them up early when they were thought to be bacteriologically free, has been a serious error, and that they were closed much too soon. We have such a large number of them that are still infected, and are in a bad condition, that it is well to think of that phase.

And now, just one word more; as regards the presence of the foreign body: It has been said that the foreign body is always a potential source of danger. We find that out more and more in our work. We have coming back to our hospital large numbers of men who have been discharged with foreign bodies, apparently not causing any trouble, but ultimately resulting in serious conditions, and they are returned to the hospital for the removal of foreign bodies and treatment of these serious conditions. I just wanted to bring out this matter of what we found by prolonged experience—my own experience covers about two years in service—that first, so far as I have talked with a large number of surgeons in connection with my radiographical

work, that the Dakin method is very good, if followed correctly. Now, I am not appearing before you as a champion of the Dakin method, but I know that the Dakin method, if carefully followed out, is the best thing that I have seen in helping to cure up and close eventually these empyemas and other chronic infected cases, and I would like to emphasize *not to close these wounds that you think are bacteriologically free too quickly*, and don't forget that a majority of the foreign bodies are something of a dangerous character to carry around.

(Applause.)

THE CHAIRMAN: Are there any further remarks?

DR. SMITH: May I ask Dr. Perry a question? Did you use X-ray in the treatments?

DR. PERRY: I would say we tried the X-ray treatment in probably 200 cases of true empyemas in our hospital group in France, and with apparently no curative results, and if I was stating this just on my own experience I would hesitate to come before you gentlemen and make the statement I do in the matter, but we have had with us present at the time about fifteen Roentgenologists—I think there were fifteen in the group at the time that I had charge of the service there, and the most of them were very bright and competent men, and we tried it out, as near as I can recall, in 214 cases, and we seemed to get no curative results. Of course, I will say this: The climate there and the conditions were unfavorable to that class of cases; that is, it was cold, damp and a changeable climate. But the treatments were carried out after the methods taught in the New York schools and Cornell, and those that were slightly different, taught down at Camp Greenleaf, and we did not get any curative results.

THE CHAIRMAN: We will now go to the main hall and we will have the lantern slides by Dr. Smith.

(Lantern slides in connection with Dr. Smith's paper.)

THE PRESENT STATUS OF BLOOD PRESSURE.

BY LOUIS M. WARFIELD, A. B., M. D.,
MILWAUKEE.

From time to time we must pause in our efforts to improve our methods of diagnosis by instrumental aids and seek to evaluate the collected results lest we be carried away by enthusiastic advocates, or held back by skeptical reactionaries. Unfortunately, every method of procedure advanced by a man, or groups of men, is made to appear at first to be the very last word on the subject. No account is taken by the inventors of many variabilities of the human organism in health and disease. Laws are formulated on insufficient data which have a tendency to pass into medical literature as dogma, and are believed in by many as are the tenets of a religion. The diagnostic help afforded by estimation of the blood pressure has been no exception to this well known but oft neglected rule.

To discuss a subject it must be defined. Blood pressure is the force used by the heart to keep the blood in equilibric circulation. In order that the heart may be able to perform this function it must have a left ventricular muscle more or less capable of strong and uniform contractions. The distributing channels (the aorta and large branches) should be elastic and the arterioles should have intact muscle walls. Further, the vasomotor sympathetic system should be in good tone, and the venous return flow from the capillaries to the heart should be unobstructed. Let us bear in mind all these accessory factors, for changes in any one, or more, may modify the blood pressure.

Let us suppose a normal adult heart in good function. At the beginning of systole all the valves are closed. The blood in the body is being forced along to the capillaries by the elastic rebound of the large arteries. The intraventricular pressure rises rapidly until it is just greater than the pressure at the aortic valve on the aortic side, when the aortic valves open and 100 c.c. or more of blood are rapidly propelled into an aorta fairly well filled with blood and still contracting upon the contained column of blood. The heart contracts until it empties itself, the diastole begins, the aortic (pulmonic) valves close, the mitral (tricuspid) valves open. The blood is kept circulating during diastole by the elastic recoil of the aorta and large branches. Just as much blood pours into the ventricles during diastole from the great veins as is forced out during systole. This is elementary physiology, but often forgotten.

There are three terms used in blood pressure. The maximum or systolic pressure represents the full force of the cardiac contraction. The minimum or diastolic pressure is the pressure at the aortic valve during diastole. It represents the actual contractile force which the left ventricle exerts before one drop of blood enters the circulation. It is, therefore, supposed to measure the peripheral resistance as this is the back pressure which keeps the aortic valves tightly closed. It is possible that this is true because in states of low peripheral tension the diastolic pressure is found to be low. The pulse pressure is the difference between the maximum and minimum pressure, and therefore, ac-

tually measures the pressure under which the blood is forced along the great vessels towards the periphery. It is evident, therefore, that only a part of the actual contractile force of the left ventricle is concerned in the movement of blood to the periphery.

The systolic, the diastolic, and the pulse pressure taken together represent what I have called the pressure picture. The whole must be taken in order to gain information of value in blood pressure determinations. One might just as well count the red blood corpuscles and name the kind of anemia present as to take the systolic pressure and expect to gain valuable information concerning the circulation. It is true that much has been learned by taking the sytolic pressure alone, as much may be learned by counting the red cells alone. Because this is so is, however, no argument in favor of continuing a poor method of gaining information.

Yet another factor in blood pressure must be taken into consideration. That is the venous pressure. Wherever there is engorgement there is obstruction to flow and increased resistance which is reflected back upon the arterial side. This necessarily affects the blood pressure. Venous return then must be free in order to insure even blood pressure and perfect circulation.

It is assumed that the auscultatory method of taking blood pressure is being used and that the reader is familiar with the five phases in the average normal person. The first phase is represented by a short, sharp click; the second phase by a click and murmur; the third phase by a loud, clear, snappy tone; the fourth phase by a dull tone which quickly dies away to no sound, the fifth phase. All these phases can be easily heard by gradually lowering the air pressure in the arm band while listening over the brachial artery at the bend of the elbow. There are a few precautions which should always be observed in order to take a reading:

1. The patient should be resting in a comfortable position with all muscles relaxed.

2. The patient should have rested at least ten minutes after entering the physician's office.

3. The patient should be mentally relaxed.

4. The cuff should be snugly, but not tightly, and smoothly wrapped around the bare arm and the cuff should be warm.

5. The lower end of the cuff should not come to the bend of the elbow.

6. The arm should not be fully extended, except when the patient is lying in bed.

7. The bell of the stethoscope should be evenly placed over the lower end of the brachial artery about two cm. from the lower end of the cuff. The artery should bisect the circle made by the bell. The bell should not be pressed too firmly, nor should it be tilted so that it partially occludes the lumen of the artery, either proximally or distally to the center of the bell.

8. All parts of the instrument should be air tight.

9. Pressure should rapidly be made above systolic pressure. The air then may be rapidly reduced at the first reading in order to determine roughly the upper and lower limits of sound.

10. At the second reading the pressure in the cuff is then raised to a point about 10 mm. above maximum pressure and the air valve opened so that the pressure in the cuff falls slowly.

11. The first two readings should be discarded as they do not represent the true pressure. The first one is always much too high (except in rare cases), the second one is usually too high.

The first sharp tone which is definitely heard over the artery as the pressure in the cuff is released is the systolic pressure. It is usually a short, quick tone. Sewall has recently called attention to the well-known fact that the respiratory waves modify the tone. That is to say if the pressure in the cuff is held at the first audible tone, the tone comes and goes with respiration and not until the pressure in the cuff has fallen appreciably more are all heart beats heard as sharp clicks. This is true. The deeper the respirations the greater difference there is between the highest point where the tone is first heard and the point where all tones(heart beats) are heard. He raises the question, "Where is systolic pressure to be measured?" In dyspnoea this would be difficult. Personally, I should take the average of the high point where an occasional tone is heard at expiration and the point where all tones come through. For the average patient during quiet respiration there is practically so little difference due to the respiration that it can be disregarded entirely.

The diastolie pressure is read at the point where the loud tone (the so-called third tone) suddenly becomes dull. Here also there is often, especially

in high tension, a difference of twenty mm. between that point and the disappearance of all sound. In cases of aortic insufficiency there is always a dull sound heard over the uncompressed artery. I have shown both clinically and experimentally that the place to read the diastolic pressure is at the change from loud third to dull fourth tone. This is now generally conceded. Practically, it makes little difference in the average case whether one reads the diastolic pressure there, or at the disappearance of all sound. The difference amounts to from 4 to 8 mm. It is only necessary to remember that in the interpretation of the reading. The pulse pressure can now be determined. In general it is about 40-45 mm. for an adult. Many a man goes about with a pulse pressure of 30 mm. and 20 mm., which is not incompatible with life, provided there is not increased pressure. Above 60 mm. is certainly to be classed as high pulse pressure.

What are the normal systolic and diastolic pressures? In spite of the great numbers of estimations made I do not believe there are any figures for normal pressure at any age, or for either sex. There are average pressures present in healthy persons. These may be said to be between 120-130 mm. Hg. systolic and 80-90 mm. Hg. diastolic giving a pulse pressure which has limits of 30 to 50 mm. Hg.

After all nothing is gained by attempting to read to the millimeter. What difference does it make if the systolic is 122 or 132 mm.? It is normal. If the diastolic is 88 or 76 mm.? It is normal. Entirely too much attention has been focused upon the actual instrumental reading. There are many sources of error in any clinical instrumental method. Not alone is the factor of the observer to be reckoned with, but many variables in human beings must be borne in mind. If it is the first time the patient has ever had the blood pressure taken, up goes his systolic pressure. If he happens to take a deep breath just as the pressure cuff is nearing systolic pressure one reads too high a systolic pressure. Should he be excited, or nervous, or have just taken a hearty meal his systolic is higher than when he is quiet, or between meals. I have long ceased to be interested in mere figures to represent the blood pressure, except in a general way. I care not whether the systolic is 180 or 220 mm. It is high. That is the important feature. But how about the diastolic pressure? That is, in my opinion, the more important of the two extremes. However, I wish to emphasize the point that the whole pressure picture is important. The diastolic pressure measures dead weight, wasted energy, if you like, and so a diastolic which approaches the average systolic is a sign that the heart is doing a great amount of unnecessary work. The diastolic pressure is, furthermore, not influenced by the causes which produce changes in the systolic pressure. It is, therefore, steadier under all conditions and when it is low, or high, it has really some significance in itself.

To lose sight of the fact that the blood pressure is only one link in the chain of evidence which leads to diagnosis is to miss the whole point of the value of blood pressure estimations. Evidently many have been guilty of this blindness. The fault has lain in those of us who, in order to press a point, have stressed one feature of the diagnosis. Now that blood pressure is a recognized procedure it behooves us to correct our mistake. I think it can be said that there are certain conditions where blood pressure readings are diagnostic principally in a negative sense. For example, a normal average pressure picture is incompatible with a chronic interstitial, or chronic diffuse nephritis. I have found the average normal in cases of chronic parenchymatous nephritis (the small white kidney with few interstitial changes). Again, a normal systolic and very low diastolic cannot occur in any cardiac valvular lesion except aortic regurgitation.

In spite of experimental work showing that intracranial pressure raises blood pressure there is little clinical evidence to support the observation. Intense grades of cerebral compression occur without any appreciable change in the blood pressure, so that the estimation of pressure is of little value in diagnosis.

In all fevers the blood pressure picture tends at first to show an increased pulse pressure. The rate of the heart is increased and the diastolic pressure, due to vasodilatation, tends to assume a lower level than in health. In exhaustive fevers the systolic later falls so that the pulse pressure may be as low as 20 mm. Hg. This is scarcely enough to force blood to the brain in the sitting or erect posture, so that dizziness, or fainting results in those who attempt too early to assume these positions.

In pneumonia it has been held by some that the danger point to the circulation is reached when

the heart rate reaches, or passes, the number of millimeters of systolic pressure. Probably this is true for some persons, it certainly is not true for all persons. If the average systolic were known of all those who developed pneumonia some reliable data might be assembled. The fact that this is not known renders conclusions based upon such an arbitrary formula of no great value.

Hypotension, that is a blood pressure picture below normal has, so far as we know, no great significance. Many exceedingly healthy persons live an active life with a systolic pressure of 110, or lower, and a diastolic pressure of between 70 and 80 mm. In such persons exercise raises the systolic normally as it should without affecting greatly the diastolic pressure and the recovery is normal. Hypotension is seen often in old people with senile arteriosclerosis when the myocardium is the seat of atrophy and increased pigmentation. Hypotension is also seen in Addison's disease, in advanced carcinoma, advanced tuberculosis, and other chronic diseases.

In shock and hemorrhage the blood pressure falls rapidly, the systolic always more rapidly than the diastolic so that the pulse pressure becomes low and in fatal cases rapidly approaches and reaches zero. Before that stage arrives it is not possible to measure the blood pressure as the patient is pulseless.

Hypertension (increase in the blood pressure picture), is the feature of blood pressure which has claimed the most attention. Hypertension, I believe, is a conservative and compensatory process. It is the response on the part of the circulatory system to keep the body going in the face of factors which are tending to destroy it. No one will deny that an extreme grade of hypertension is in itself an element of danger to the afflicted person and must be looked upon as one of the factors in prognosis. It is, however, my belief that hypertension does not begin as a disease in itself, but as the result of conditions with many of which we are unfamiliar, but which cause the heart and circulation to respond with increased pressure in order to keep the circulation in equilibrium. Weigert's law of overgrowth holds for every tissue in the body. The general tendency of all tissue when injured badly is to heal with an increased amount of tissue which eventually becomes fibrous. Other tissues which are injured can be put more or less completely at rest. Consider for a moment the enormous callous thrown around the fractured ends of bone where there is too much motion allowed during healing.

The heart and arteries cannot be put at rest during the time when poisons of whatever nature are acting upon them. However, there is overgrowth in the form of enlarged and increased muscle fibres in the heart, yet eventually, fibrous tissue is deposited and muscular force is diminished. The fact that a vicious circle is finally established and the fact that states of great hypertension in themselves are harmful do not seem to me to prove that hypertension is not a conservative process.

We see acute and chronic hypertension, or better subacute and chronic. Then there are persons who appear to have hypertension as a normal state. The anomaly seems to be in families and to be hereditary. Such persons are always stocky, thick-necked, red-faced, with solid fat. No kidney lesion can be found and no functional change can be demonstrated by any test. The knowledge of the hypertension is usually gained at a life insurance examination or accidentally by having the pressure tried as a stunt.

Entirely too much stress has been laid upon hypertension. The laity become panicky when told that the blood pressure is high. It is time that a halt was called to the flood of loose statements published broadcast and guzzled down by poorly trained doctors. The men who write have a great responsibility resting upon them which some appear to take lightly. We have frightened the public nearly to death. Let us attempt to inculcate a sane attitude towards this subject. The sphygmomanometer has come to stay. Practically every doctor carries one in his bag. The patient asks why the doctor did not take the blood pressure.

Again, hypertension in itself is not dangerous and should not be treated by vasodilation drugs. We are too prone to think that hypertension has the patient rather than the patient has hypertension. It is axiomatic that the part cannot be as great as the whole.

Hypertension is an indication of some process going on in the body which results in increased work for the heart. At times it is temporary or subacute, and apparently due to poisons generated in the alimentary tract or connected with some endocrine gland dysfunction. Such a condition as the hypertension of the menopause belongs to the endocrine gland pathology. Again, the rising

blood pressure in pregnancy is often only temporary, but is a most valuable indication of probable disease of the kidneys and of probable eclampsia. No obstetrician does his full duty to the pregnant woman if he fails to take the blood pressure picture frequently during the last half of her pregnancy. Hypertension and chronic interstitial or chronic diffuse nephritis are not synonymous. There are at least three types of chronic hypertension, (1) the chronic interstitial nephritic; (2) the essential or hereditary; (3) the arteriosclerotic. There are grades of all three and combinations of any two so that it is difficult often to place the individual who has hypertension in any one group. Since 1917 when I published this grouping I have not seen any better classification. I have found it of value and, therefore, await a better classification before discarding it.

"Group 1. Chronic Nephritis. These are the cases with a high-pressure picture, that is to say, high systolic (200+) and high diastolic (120-140+). The pulse-pressure is much increased. The palpable arteries are hard and fibrous. There is puffiness of the under eyelids, which is more pronounced in the morning on arising. Polyuria with low specific gravity and nycturia are present. There are almost constant traces of albumin in the urine, with hyaline and finely granular casts.

"Functionally these kidneys are much under normal. The functional capacity determined by Mosenthal's modification of the Schlayer-Hedinger method shows a marked inability to concentrate salts and nitrogen. The phthalein output is below normal. As the case advances the phthalein output becomes less and less until a period is reached when there are only traces or complete suppression at the end of a two-hour period. Such patients may live for ten weeks (one of our cases) all the time showing mild uremic symptoms, and suddenly pass into coma and die.

"The natural end of patients in this group is either uremia or cardiac decompensation (so-called cardiorenal disease). Cerebral accidents may happen to a small number. It is only to this group, in my opinion, that the term cardiorenal disease should be applied. Formerly I believed that all high systolic pressure cases were cases of chronic nephritis of some definite degree. From the purely pathological standpoint that is true, but from the real, the functional standpoint it is far from being the true state of the cases.

"In this group there is marked hypertrophy and moderate dilatation of the left ventricle with dilatation and nodular sclerosis of the aorta. The kidneys are firm, red, small, coarsely granular, the cortex much reduced, the capsule adherent. Cysts are common. It is the familiar primary contracted kidney. Mallory calls this capsular-glomerulonephritis. The etiology is obscure. Often no cause can be found. Again, there is a history of some kidney involvement following one of the acute infectious diseases, or it may follow the nephritis of pregnancy. Usually, however, these cases fall into the group of secondary contracted kidneys, chronic parenchymatous nephritis.

"Group 2. This one might be designated as the hereditary type, although there is not always a history in the antecedent. This group includes the robust, florid, exuberantly healthy people. They often are heard to boast that they have never had a doctor in their lives. They are usually thick-set or very large, fleshy people. The pressure picture is exceedingly high. The pulse-pressure is moderately increased. The arteries are rather large, fibrous, and often quite tortuous, although this is not always the case. Some persons have hard, small, fibrous arteries. There is no puffiness beneath the eyes, no polyuria, and no nycturia as a rule. The urine is of normal amount, color, and specific gravity. Albumin is only rarely found and then in traces, but careful search of a centrifuged specimen invariably reveals a few hyaline casts. The phthalein excretion is normal or only slightly reduced. The kidneys excrete salt and nitrogen normally. It is in this group that apoplexy is found most frequently. The rupture of the vessel occurs when the victim is in perfect health, often without any warning. Occasionally when such a case recovers sufficiently to be around, cardiac decompensation sets in later and he dies then of the cardiac complications.

"Pathologically the hearts of such persons are found to have the most enormous hypertrophy of the wall of the left ventricle. The cavity is somewhat enlarged, as is always the case when the pulse-pressure is increased, but the size of the cavity is not the striking feature. The aorta is fibrous, thick-walled, and the arch is slightly dilated. There are patches of arteriosclerosis. One such case seen, only at autopsy had a rupture of the aorta just above the sinus of Valsalva and died of hemopericardium. The kidneys are of normal

size, dark red, firm, the capsule strips readily, the surface is smooth or finely granular, the cortex is not decreased. The pyramids are congested and red streaks extend into the cortex. Microscopically the capsules of the glomeruli are a trifle thickened; a few show hyaline changes. There is rather diffuse, mild, round-cell infiltration between the tubules. The tubular epithelium shows little or no demonstrable changes. The arterioles are generally the seat of a moderate thickening of the intima and media, but it is not usual to find obliterating endarteritis. There is evidently a diffuse fibrous change which has not affected either the tubules or glomeruli to any great extent.

"Group 3. This might be called the arterio-sclerotic high-tension group. The cases are usually over fifty years old. They are men and women who have lived high and thought hard. Often they have had periods of great mental strain. Many men in this group were athletes in their young manhood. Many have been fairly heavy drinkers, although never drinking to excess. They are usually well nourished and inclined to stoutness. The pressure picture is high systolic with normal or only slightly increased diastolic and large pulse-pressure. The arteries are large, full, fibrous, usually tortuous. The heart is very large, the apex far down and out. There is no polyuria; nycturia is uncommon, quite the exception. The urine is normal in color, amount, and specific gravity. Albumin is only rarely found and hyaline casts are not invariably present. The phthalein excretion is quite normal and the excretion of salt and nitrogen are also normal. The terminal condition in most of the patients in this group is cardiac decompensation. They may have several attacks from which they recover, but after every attack the succeeding one is produced by less exertion than the preceding one, and it becomes more and more difficult to control attacks. Eventually the patients become bed or chair-ridden, and finally die of acute dilatation of the heart.

"Occasionally patients in this group may have a cerebral attack, but in my experience this is uncommon. Pathologically the heart is large, at times true cobovinum, dilated and hypertrophied. The cavity of the left ventricle is much dilated. The aorta is dilated and sclerosed.

"The kidneys are increased in size, are firm, dark red in color, with fatty streaks in the cortex. The capsule strips readily and the cortex is normal in thickness or only slightly increased. The organ offers some resistance to the knife. The microscope shows small areas scattered throughout where the glomeruli are hyalinized, the stroma full of small round cells, the tubules dilated, and the cells are almost bare of protoplasm. Naturally the tubules are full of granular cast material. Also the arterioles show extensive intimal thickening, fibrous in character, with occasional obliterating endarteritis. One gets the impression that the small sclerotic lesions are the result of anemia and gradual replacement of scattered glomeruli by fibrous tissue. For the most part the kidney, except for the chronic passive congestion, appears quite normal. One can readily understand that in such a kidney function could not have been interfered with."

Hypertension has always been understood tacitly to mean increased systolic pressure. With this implied conception I heartily disagree. The systolic pressure is only one end of the blood pressure, the other end is just as, if not more, important. Who will say that a man with systolic pressure of 160 mm. and diastolic pressure of 120 mm. has only possibly a mild hypertension? To me that is much more hypertension than the man who has 180 mm. systolic and 90 mm. diastolic.

There are at least two disturbing elements in the former case. In the first place, while the pulse pressure is apparently normal, the heart has to exert force up to average normal systolic pressure before blood enters the aorta. So much is wasted energy. Under such circumstances the circulation is poorly maintained. In fact, such a hypothetical pressure indicates impending cardiac failure. In the second place, all cases of compensated chronic hypertension have left ventricles which are hypertrophied and which have also increased blood capacity. If the heart is acting well all the blood in the ventricle is propelled into the aorta at every systole. Therefore more blood is forced into the aorta, there is a greater stretching of its walls and a greater volume of blood is forced onward. Increased pulse-pressure and increased cardiac output go hand in hand. Compensated hypertension is only possible with increased blood pressure which means increased output and is associated with enlarged ventricular capacity.

If this be true, and there is evidence at the autopsy table to prove it, then the pulse pressure be-

comes a most important figure to know. This can only be obtained by reading the diastolic pressure.

To take the first example again, 160 mm. is not high in a man of 60 years. Suppose that was the only figure taken. Would there not be a grave omission and a consequent error in prognosis and treatment? Or suppose the systolic pressure were 180 or 200 mm., would it not be most valuable to know whether the diastolic pressure were 130 or 100 mm.? My contention is that it is so valuable that only by obtaining the pressure picture are we enabled to give intelligent prognosis.

Over two years ago I said, "No blood pressure reading is complete unless both systolic and diastolic pressures are determined.

"Pulse pressure is important because it gives the actual driving (kinetic) force which keeps the blood in motion, and has, therefore, a great value in prognosis.

"High pulse pressure is invariably acompanied by four conditions, some of which can always be determined, and frequently all of which can be found. These are (1) increased size of the cavity of the left ventricle; (2) definite dilatation of the arch of the aorta; (3) bronchial or tubular breath sounds heard over the manubrium, and (4) increase in size of all distributing arteries."

Arteriosclerosis and hypertension are not necessarily coincident. Frequently they are. The large, fibrous, diffusely thickened artery and the relatively small hard, fibrous artery are associated with hypertension. On the other hand the goose-quill or beaded pipe stem artery of senile arteriosclerosis is apt to be found with hypotension.

Finally, my conception of the present status of blood pressure boiled down to its concentrated essence, is that blood pressure has been considered an end not a means to an end. We must use it as one of many valuable diagnostic and prognostic aids. We must have the pressure picture before us in order to arrive at any reasonable conclusions. We must look upon hypertension as a symptom not as a disease. Hypertension is only a physical, or physico-pathological expression of something occurring in the body of a human being.

A little mental journey now and again into the foggy cerebral atmosphere where the fundamental sciences lie is excellent to clear the fog and to keep one from travelling jauntily along the speculative white way.

MEDICAL SERVICE FROM VIEWPOINT OF A VOLUNTEER.*

BY M. R. WILKINSON, M. D.,
OCONOMOWOC, WIS.

Upon inquiry from the Surgeon General's office in the summer of 1916 as to whether or not I would consider a commission as lieutenant in the Medical Reserve Corps, I replied that if my country needed my services that I would not only consider it a duty, but a privilege to serve her. Request to present myself at army headquarters, Chicago, for physical and professional examinations followed. This request I complied with. During the examinations the question was put to me: "If found qualified will you consider the immediate acceptance of a commission?" To which I replied that, having a large family, I did not feel that I could afford it. It was then clearly evident that it was only a question of time until, that which we hoped against hope would not be, had to come, viz.: a declaration of war. Consequently, when on March 24th the commission of lieutenant was offered me, I immediately accepted and held myself in readiness for orders.

May 25th, orders were received to report for duty on or about June 1st at the Medical Officers' Training Camp, Ft. Benjamin Harrison, Ind. June 1st, together with a half dozen other Wisconsin men, I reported for duty, was vaccinated, shot in the arm and was put to work helping to do the same thing to other "rookies" as they came in. By evening a goodly number had arrived and everybody was busy getting settled for the night. The situation was pleasing, cordial men getting together in camp and the many novel attractions incident to a military post training men in time of war. Taps and lights out found us snugged away on our cots with others no doubt, as well as myself thinking: "No doorbells or telephones to disturb sleep tonight." I awoke, however, about six times before morning with the cold. Each time I would turn over, go to sleep to later awake with the side next the cot chilled again. By morning I had formed an opinion of the hardness and coldness of an army cot that still lingers with me. June 2nd found us lined up for instruction and practice in military drill. This military drill served a double purpose;

*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 3, 1919.

while it taught us how to handle small bodies of troops it conditioned us physically. With this we had classes in army rules and regulations, manual of courts martial, field sanitation, manual of the Medical Department, etc., until when taps sounded it was sweet music and the army cot was as inviting as a bunch of downy feathers. Before leaving this subject I want to pay tribute to the character of the men who made up this first camp. There was no muttering of discontent, and their honesty can be attested to by the fact that during the course money, postage stamps, fountain pens, books, paper, and at times everything in trunks was left exposed and I never heard of as much as a postage stamp being lost.

At the close of the second month's training we were looked over for promotions. I was advanced to a captaincy and assigned to duty with the tuberculosis examining board at Ft. Benjamin Harrison post. Getting back into professional work again pleased me as I felt more at home at that work. Splendid articles had been written by Col. Bushnell on the methods to pursue in making a diagnosis early in tuberculosis. These instructions were carefully studied and his methods taken for our technique. The latter part of September found this work completed and orders came to proceed to Camp Sheridan, Montgomery, Alabama, and report for duty with the tuberculosis examining board on duty at that camp. The term "Sunny South," I fear, has given many a northerner as it did myself an erroneous opinion of that climate in fall and winter. I expected comfortable weather for some time to come but it was not long until I began to suffer from the penetrating cold of the nights. I speak of this because it is quite common for a physician of the North to dream that in the last decade of his life that he will hie himself away from the snow fields to bask in the sunshine of the lower latitude. Gentlemen, this is a nightmare; give me the snowfields. At Camp Sheridan we examined a divison of the National Guard of Ohio, a fine body of troops, finding about the same per cent of active tuberculosis as in other organizations.

My next labors were in the same capacity at Camp Jackson, South Carolina, examining a division of the National Army. This was in December and measles, pneumonia and cerebrospinal meningitis, or as it was later called meningococcic septicaemia, was causing considerable trouble and filled the base hospital. Thorough and efficient work was done by the staff of this hospital and its laboratory in gaining control over this epidemic. Part of the tuberculosis examining board being quartered at the hospital was quarantined with the hospital. A physician was on duty all night to give immediate aid by spinal puncture and the introduction of antimeningococcic serum. By taking swabs of everyone's throat they were able to round up and isolate the carriers and stamp out this disease.

My next field of labor was at Camp Gordon, Atlanta, Georgia, to help finish the National Army division stationed for training there. This was in January and report had it that those who trained there need have no fear of the mud of Flanders Field. The finishing of this camp practically completed the work for the time being and the examiners were sent to Camp Greenleaf, Ft. Oglethorpe, Ga., for post-graduate work on the chest, including lungs and heart. Here brilliant instructors and demonstrators with an abundance of clinical material gave us the course of our lives on the lungs and heart. This course was very pleasing to every man; in fact we could not get enough of it. From here the examiners were again distributed, some again to the boards, others to divisions as tuberculosis specialists and others into hospitals caring for chest cases, for the most part general hospitals. To gain experience in keeping hospital records and gain such other knowledge as is incident to the work many were sent to General Hospital No. 16, New Haven, Conn. From there I was assigned to duty at a new general hospital, No. 8, Otisville, N. Y., where I served eight months or until I received my discharge from the service in December, 1918, after the armistice was signed.

In this work of examining the chests of the soldiers particulary for active tuberculosis the Surgeon General's office was able to prevent many men who were unfit from getting overseas, needing housing, feeding and nursing three thousand miles from home. Roughly estimating this number at one per cent in an army of two and one-half million it would mean the burden of 2,500 sick men abroad and also naturally the death of many whose lives have been saved and their health restored by this early discovery. I can also say that if any soldier has returned home with active tuberculosis to be a burden and a menace to his own relatives it has been of his own choosing and contrary to the wishes of the Surgeon General's office. Soldiers thus ill and in the service receive their pay,

their clothing, their transportation gratis and all that is asked of them in return is that they be law abiding individuals. Figure this and you will find that every private who is in a hospital is getting the equal of two thousand dollars per year. Are they satisfied and contented with this? Not over 50 per cent of them. Five per cent are writing their congressmen charges against the hospitals of everything imaginable, while the officers, nurses, corpsmen and even the cook are doing their utmost to make things comfortable and pleasant for them and to keep them out of trouble by condoning first and sometimes second offenses, trying moral suasion until patience ceases to be a virtue and the guard house has to be resorted to. I can assure you, gentlemen, that when you read of charges of cruelty against an army hospital in the daily press you may rest at ease as investigation will show that nothing of a violent character has been done and the restraint used nothing of a seriously detrimental character to the patient's physical condition. Service in the army is a great school in many respects, I think all will agree who wore the olive drab. I am glad to have been in and doubly glad to be out again and be a free citizen of the greatest country in the world.

MASTOIDITIS—AS A COMPLICATION—FOLLOWING INFECTIOUS DISEASES IN ARMY CANTONMENT.*

BY E. FREDERIC BAUR, M. D.,
MILWAUKEE, WIS.

The reason for writing a paper on this subject is to show the great difference we found in this condition in the army camp and that of civilian life. The large number of cases studied—the marked difference in the symptoms complex and healing after operation.

The two great epidemics in the army cantonment were those of measles and influenza. The former was present at all times, in greater or less numbers—at one time during the winter of 1918 there were upward of 1,000 cases in the base hospital and it was the cause of over 45% of all acute diseases of the ear.

With the measles—due to the crowded conditions and necessary exposure, there was present usually a bronchitis and severe inflammation of the upper air passages and consequently a great number of infections of the middle ear. These were of unusual interest to us on account of the great differences in the course of the disease than that found in civilian life. The patient would show a symptomatology entirely different from the classical picture. He would be more or less toxic, with slight elevation of temperature—pronounced lencocytosis—coughing, from his bronchitis and laryngitis but with no complaint of pain as far as his ear was concerned. He usually complained of fullness or stuffiness of the ear. On examination no characteristic picture was found. Usually the landmarks were obliterated and the drum boggy and swollen.

It was the practice to open all the drums freely that showed signs of inflammation and take culture from the middle ear secretion—there was no waiting for bulging or recessions.

The culture would show that the organism was streptococcus viridens or hemolyticus. Very few Mucosus-pneumococcus or staphylococcus. The discharge after free opening would be of a muco-purulent character or rapidly become so, and was usually profuse.

Some of these with good drainage and less virulent organism and good condition of patient himself would go on to healing, but many progressed to mastoiditis and operation. The discharge would take on a pulsating character under great pressure and usually there would be drooping of the posterior superior wall. The temperature was rarely high and would usually be below 100 degrees, but the most striking characteristic was the absence of pain. Some had a feeling of soreness on deep pressure over antrum or tip but repeatedly this could not be elicited.

After knowing the organism of infection, the symptoms pointing for operation were the profuse pulsating character of the discharge and drooping of the posterior superior wall, also the patient had a more or less septic look.

It is almost impossible to believe that a mastoid is entirely broken down and filled with pus and yet the patient insists that he has had no pain, or very slight on deep pressure, but this was repeatedly the case.

Operation could never be done too early, only once in a great number of cases have I seen a mastoid opened in which great destruction had not

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*Read before the Eye, Ear, Nose and Throat Section, State Medical Society of Wisconsin, Milwaukee, Oct. 2, 1919.

taken place, and the mastoid filled with pus and granulations.

To show the great number of cases seen during the height of the epidemic, would mention that eleven mastoids were operated in one day and one hundred fifty in forty-five days. The mastoids were freely opened, all cells obliterated and diseased bone removed. In civilian practice this usually ends the process of disease and your mastoid fills in and closes. But we found that operation at times did not limit or end the process. The healing if uneventful was very slow and left large depressions. It was hard to get good granulations started and repair was very slow.

A striking feature was the great number of cases of meningitis relatively that followed the disease. The cases of thrombosis or brain abscess were rare. The cases of meningitis came on usually between two and three weeks after the operation. The infection was thought to have traveled to the meninges through the blood or lymph channels but I think it was a direct extension of the infection through the inner plate and dura as so many of the autopsies showed.

During the influenza epidemic we had a great number of acute middle ear infections but the picture was always different from that following measles. The otitis media was very often of a hemorrhagic type and was very mild. After free opening of the tympanum the cases ran a very mild course and usually resolved in a few days.

It was rarely followed by mastoiditis, except in those cases that went on to a streptococcic pneumonia. A word as to the operation in the pneumonia cases: A general anaesthetic being out of the question, we found the operation could be done without great discomfort to the patient with local anaesthesia and followed this out in all pneumonia cases.

Here we have two contagious diseases, both of which were attended with severe inflammation of the upper air passages—both frequently followed by acute infection of the middle ear—one complicated in great numbers with a mastoiditis of a fast destructive type and the other in which mastoiditis was a rarity. Which brings us to the causative organism—with the measles we had an unusually virulent strain of streptococci which destroyed the mastoid very quickly without either subjective or objective symptoms. With the influenza the culture sometimes showed no growth—mixed infection or if a streptococci—it was of a much less virulent strain. In conclusion I would state that work in the army base hospital showed us again how valuable it is to work in close connection with the laboratory—it shows us a multiplicity of cases of mastoiditis and a strain of infection that I hope we will never encounter in civil practice.

DISCUSSION.

Dr. E. F. Baur: I have said some things here that I wish the members would discuss. It was different from anything I thought we have had in civil life. The mastoids were so very destructive. We do not see them, that is all. There were no objective or subjective symptoms of the patient at all.

The Chairman: Were there any radicals done?

Dr. E. F. Baur: No, they did not allow radical mastoids in the army.

The Chairman: For instance, a case showed no symptoms except the ordinary course of drainage; no pyostatis medium used, how long would that be allowed to go on before a mastoid was done?

Dr. E. F. Baur: After we got the culture we operated the fourth day. I went in there looking after the cases just as I did in civil life. I would watch the cases, and would probably see a little drooping of the posterior superior wall, and they would have a little discharge. They would reach over my shoulder and say: "Baur, you better operate on that case." I would say: "Wait a few days," and they would say: "No, operate at once." I never saw a case where the structures were not all broken down.

The Chairman: Was there some of these cases that had been para-anesthetized?

Dr. E. F. Baur: Yes, but they never allowed them to go over two weeks. You could not operate too early.

Dr. C. G. Dwight, Madison, Wis.: I would like to ask Dr. Baur what local anesthetic they used, and what technique was used in the mastoid work.

We had at one time twenty-five hundred or three thousand boys in Madison, and our plans were very much the same. They were all confirmed by X-rays.

The infection was very rapid. They would start with severe pain, and in from three to five days—never over five days—the cases were X-rayed.

In our work there was not a radical operation done. The dressings were very long, and they had to be done frequently. Those cases were very sick—at the same time most of them having influenza, but the death rate from that seemed to be low. We did not discover there, however, that the meninges were involved.

I was hoping to hear this story, because we rather blamed ourselves for operating so hurriedly, but I will tell you that it had to be done.

Dr. Chas. Zimmerman: I would like to ask Dr. Baur about hemorrhagic media otitis, and hemorrhagic myringitis.

I would also like to ask about the after treatment?

Did you close the wound partly, or leave it open all the time?

Dr. A. G. Hovde, Superior, Wis.: It seems to me that the reason for the great and rapid destruction is the diplococcus mucosus. We have had a number of those experiences where three or four days suffices to destroy the whole mastoid. There is no pain, because the action is so rapid.

Sinus-thrombosis is not likely to develop because the symptoms soon become so definite that sinus-thrombosis has not time to be accomplished before operative interference becomes imperative. I recognize that it is probably the diplococcus mucosus that is the cause of it. I can think of quite a number in our practice that have been of that type, and the absence of pain is one of the great characteristics. If you in addition have a profuse discharge, and begin to have a bulging posterior wall you can be pretty sure that you have that sort of infection.

One point I would like to ask in reference to after treatment, and that is this: It was quite a common practice for many years past, after a simple mastoid had been done, to pack the cavity and leave it for a number of days. It always seemed wrong in principle to me, and I could never let myself do that, even though it was the common practice. I always drained it, using the rubber tube with the packing, and I remove the packing the next day. From that time on I give free drainage through the rubber tube. Our experience has been that it healed very well. I do not think we had any protracted cases, even though they were of this type of mastoid that I speak of. I wondered if there was any difference in the dressing that had something to do with it.

Dr. G. N. Brazeau: Will you allow me to tell you a few experiences we had at Base Hospital No. 1, N. Y.? I was closely associated with Major Baring, and was very much interested in seeing him do his work.

Now, just contrary to what Dr. Baur stated, they did practically nothing but the Schwartze-Stack operation, complete exenteration (obliteration) of the mastoid cells.

We had a great many cases of influenza, but never following influenza did we have a mastoid case.

Speaking of X-rays, Dr. Dench used to come in and help us out once in a while, because we had so many cases. He came over one day after Dr. Cole had taken a great many pictures of all these men, and they got into a row right in front of all of us men. Dench said: "I will make a diagnosis with the otoscope, and you bring up your plates, and if I don't prove you are wrong I will take my hat off to you." The argument between those giants was more than interesting.

We had a great many cases of mastoiditis following. I could not help but think of what the doctor said, that they did no complete cleaning out of the mastoid cell; while in our hospital they did nothing but that.

Dr. D. J. Coffey: Dr. Baur's paper does not leave great room for discussion. He is telling something that has happened under circumstances which many of us have been unable to see. I think it has a practical application for civil practice in that he describes the appearance of the ear, and the symptoms of serious ear trouble—ear infections that usually ran on to mastoiditis. I think many of us are coming to the conclusion that we can tell very early in the history of acute middle ear whether that is going to clear up without a mastoid; at least I have had a few experiences that made me believe that some day we will be able to tell in advance somewhat how the case is going to progress. We have known for some years that there is extension from the middle ear to the mastoid where the infection is the streptococcus mycosis, and very often it is almost characteristically a painless procedure; a very wide destruction is done before we are aware of the fact. I believe further information will demonstrate that the streptococci can produce these results. I do not believe it is due to the rapidity of destruction, as suggested, for the reason that three or four years ago I had as a patient a man who did not submit to a mastoid for five weeks. The man did not submit to his operation, but we treated the mastoid. He stayed in the hospital. Time was of no object, and expense was of no object, and as long as there was a chance we did not operate. We did myringodectomy seven times. There is a very complete record at the hospital. The case was diagnosed as erysipelas. He had a little pain from the first day, but after the first incision was made in the tympanic membrane he never had pain until he went under the operation. That mastoid was completely saturated and filled with pus.

There were, at least, a number of exceptions to the explanation offered by the doctor that it is owing to rapid destruction. Of course, it might be urged that all the destruction occurred in the first two days.

I think possibly more knowledge of the toxins of the various strains of streptococci may explain somewhat the painless progress of these infections.

Dr. Samuel G. Higgins: I think this paper of Dr. Baur's is very interesting and reports of this kind should be made and should be presented at meetings such as we have today.

Dr. Baur and I alternated in service at the South View Hospital here in Milwaukee, and I know that Dr. Baur's views and mine were a great deal the same regarding the care of patients there. I must say that we had very few mastoid operations. We had a great many children with scarlet fever, measles, oditis media, and threatened mastoids. We were able to cure them by treatment, and avoided an operation. So I would not say that Dr. Baur was more anxious to operate in service than he had been here; but it seems to me as though the danger of the epidemic gave a different picture. I have thought that there were a great many more mastoid operations done than was necessary, but of course in an epidemic like this it has varied in different localities. In his camp they had a different experience than in some other camps, probably. Of course, the disease in young adults has been proven to be different than in people of advanced age and different environment. Crowding and the character of the housing has affected the epidemic in some military

camps. I was in the navy, at the Great Lakes, and my experience there did not show as many mastoid operations as they had in some of the military camps. I do not believe there were as many mastoids in other camps as Dr. Baur reports. I think that shows an unusual run in this camp.

I would like to hear from Dr. Black.

DR. NELSON M. BLACK: I did not hear Dr. Baur's paper, and I have not heard the discussion at all.

I was pleased to receive reports from Col. Mosher, who was in charge of the section of otology in the surgeon-general's office, but I have not had a chance to look them over, so I do not know about the amount of mastoid work done at the various camps.

I have heard him and Dr. Richardson discuss the matter, and I think they sent out a letter to the various commanding officers suggesting that mastoid operations be not performed unless there was absolute necessity of it, because some of the reports stated that on opening the mastoid there was nothing in the way of a pathological condition found, and it was thought that they were doing a whole lot of mastoids that were unnecessary.

DR. SAMUEL G. HIGGINS: I do not believe we have had in civil practice near the number of mastoid complications that has been reported in this paper, and certainly comparatively few operations.

DR. E. F. BAUR: The operation done was a modified Whiting. That is, we did a very free operation. We sought out every cell, and cleaned out the mastoid. We always took off the tip. The destruction was so great that we had to do this.

What I would like to emphasize is that it was a different strain of infection. We had few streptococcus mucosus. It was the strongest type I ever saw.

The anesthesia was one-half per cent cocain. I tried the cocain we had, and it worked very well. You would be surprised, going into a man that is awfully sick with streptococci pneumonia—you could open up the mastoids very freely without very much discomfort, except when you had to probe into the middle ear through the antrum. Then he would complain of pain, as you broke into the middle ear. We did not have to do much chiseling. Our work would be done with spoons and scoops.

I am trying to show that the destruction was a great deal more than we have in our usual cases.

Now, you also spoke of its following influenza. We did not have severe mastoids after influenza. These were all after the measles. If we did have them after influenza it was the usual type of mastoids. That is, we would have some pain, and on opening we would find the usual picture which we do in the mastoids in civil practice.

Dr. Brazeau mentioned the Schwartze-Stocke operation. We did the freest operation we could do in the time. We had such men as Rogers and Booth of Chicago, and Boitze, a very able man of South Bend.

As to this circular letter that Dr. Black mentioned: They did send a circular letter around, but these patients had to be operated on. I never saw a mastoid opened that was not nearly entirely destroyed. You would not have to seek your pus. As soon as you got to the top of the mastoid you used your scoop and scooped out the whole mastoid.

Now, as to the multiplicity of cases: I have seen twenty mastoids in an afternoon that had to be operated on, and because we did not have help enough some of them we did not get to quick enough, and meningitis followed the mastoid two or three weeks afterwards. You would have your healing going along nicely, and then you would get a small sequestrum thrown off from the inner plate. Your meningitis would come on between the second and third week.

I think Dr. Zimmermann asked, in these influenza cases whether we did not have hemorrhagic myringitis. We had an awful lot of those. The patients would come in with the "flu," and bleeding down on both shoulders. That was not from the drum, but from the congestion of the middle ear, although we had a lot of cases in which there was just the hemorrhagic myringitis.

THE CHAIRMAN: Will you tell us a thing or two about the complications in the shape of labyrinth involvent—how frequent they were?

DR. E. F. BAUR: I think I saw two cases in which I thought labyrinthitis was present. We didn't have them, nor did we have thrombosis. I saw two cases of brain abscess. At the start we could always have autopsies. That is why I think all the meningitis was caused by direct extension to the mastoid through the dura and not through the blood channels and lymph.

These cases progressed slowly. We all had our pet way of dressing. I was used to cleaning out the mastoid thoroughly, and packing it pretty hard for two days, and then taking the packing out entirely, except a small drain through the antrum. Then we left them all open—the mastoids all open. I tried closing them and only put in a rubber drain through the antrum.

Then Dr. Boitze tried packing the mastoid with heavy iodine thinking it would start the granulation quicker.

We tried the Carrel-Bacon method; it is not applicable to the mastoids. Allowing the mastoid to stay open and heal up from the bottom was the only method we had that showed results. We tried every method of dressing, doctor.

One man in every three was rejected by draft boards for physical disability. According to the United States Public Health Service, a great many of these defects might have been eliminated and probably will be in the next generation.

Give your physician a chance to keep you well before you call him in to cure you, advises the United States Public Health Service. An occasional thorough examination by a competent physician will save you money and prolong your life.

A SANITARY EXPERIMENT IN PHILADELPHIA.

In 1913 the Henry Phipps Institute leased a small group of houses, of a type generally regarded as the worst in the city. The Institute improved the property from the point of view of sanitation and outward appearances. The tenants were all foreign born; and a nurse was put in charge of educational work among them. The experiment was continued for three years, at the end of which time the Institute gave up supervision of the property and returned its management to the tenants. Landis, who communicates the details of this work and who illustrates his paper with several pictures of the property at various times, voices his surprise that in general the tenants have maintained the improved conditions to a much greater degree than was anticipated, since the houses passed out of the control of the Institute. Whatever lapses have occurred have manifested themselves largely in the absence of the aesthetic effect rather than in a reversion to faulty hygiene.

Landis, H. R. M.: An Experiment in Sanitary Education. American Review of Tuberculosis, March, 1920, Vol. IV, No. 1, p. 32.

WHAT SHOULD BE TAUGHT ABOUT PREVENTION.

Tuberculous infection is peculiarly malignant in infants and young children. Therefore, writes W. J. Dobbie of the Toronto Free Hospital, Weston Ontario, the young child must be absolutely protected against infection: to such an extent, indeed, that he would advocate the following two radical measures, (1) A tuberculous mother must not be allowed to come in contact with her child during its first three years and (2) If the father is tuberculous he should not live in the house so long as there is in the house an infant under three years of age. While immunity is being developed, older children should be carefully protected against disease. We should adopt a more rational attitude toward the adult consumptive. Needy consumptives should be provided with maintenance assistance, not only in institutions, but also at home. The incorrigibly careless patients should be detained in institutions.

Dobbie, W. J.: The Prevention of Tuberculosis. What We Should Teach Today. American Review of Tuberculosis, March, 1920, Vol. IV, No. 1, p. 23.

PRESENT TUBERCULOSIS PROBLEMS.

In an unusually well written paper, Stewart of Ninette, Manitoba, discusses tuberculosis problems under the subdivisions, "Doctrines, Conditions and Needs." Tuberculosis is more a social than a medical problem; less a disorder of the individual than a disorder of the community. Its occurrence in the individual depends upon all conditions which enter into his life. Its development out of social conditions connects it up with every movement for the betterment of living conditions; and in thinking about it, nothing in a community is without relevance or interest. The stresses of army life have broken down many soldiers; but this has been balanced to some extent by the number of those who have been actually improved by the drill, regular life and outdoor work of the army. Asphyxiating gasses have not aroused tuberculosis. The good results of the war have been a better understanding of the disease, more accurate diagnosis, a more general resort to treatment in early cases, more and better equipped institutions for treatment; a juster idea of the tuberculous man's place in the community, and a fuller utilization of even the definitely tuberculous man for service. The most crying need is information that shall convey the truth about tuberculosis.

Stewart, David A.: Tuberculosis Problems of Today, Doctrines, Conditions and Needs. American Review of Tuberculosis, March, 1920, Vol. IV, No. 1, p. 1.

MALARIA IN THE BALKANS.

Americans in the Balkans have changed their opinions of the Turk character. They do not blame him now because he appears to be lazy, inefficient and despondent. Wherever he is to be found in Macedonia, Albania, Montenegro, Bosnia, and Herzegovina, his characteristics are the same as those of his Christian neighbors, with whom he lives in greater peace than do the constantly bickering Christian tribes and nascent nations among themselves.

Dr. Regina Flood Keyes, of Buffalo, New York, an American Red Cross physician who has lived in the Balkans for several years and who has been decorated by the French, Greek and Serbian Governments for operations performed under heavy bombardment, attributed the backwardness of the Balkan peoples to two causes, sand-fly fever and malaria.

"The Red Cross fight against typhus, smallpox, cholera and sex diseases in the Balkans attracts much attention in the press," says Dr. Keyes, "but our real work out here is the struggle to down malaria. More British soldiers died or were incapacitated by malaria in the Struma valley during the war than were killed in the taking of the Grande Couronne.

"The whole littoral of the eastern Adriatic from Fiume down to Avlona is a hot bed of malaria and sand-fly fever while the northern shore of the Aegean from Salonica to Constantinople is even worse. America, if she is going to play her role in the world, must do for the Balkans what she did in the Panama zone. These peoples must be taught drainage, how to kill the mosquito and to maintain domestic sanitation. It is a work of years but we have made a good start in the last thirty months. Malaria causes the all too obvious despondency of the Balkan peoples. To enable them to rise we must kill the mosquito."

IMMUNE.

"I am delighted to meet you," said the father of one of last year's Fresh medics, shaking hands with the Doctor, "my son took physiology under you last year, you know."

"Pardon me," said the doctor, "he was exposed to it, but he did not take it."

THE WISCONSIN MEDICAL JOURNAL
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EDITORIALS

Diagnosis

"With all our varied instruments of precision, useful as they are, nothing can replace the watchful eye, the alert ear, the tactful finger, and the logical mind which correlates the facts obtained through all these avenues of information and so reaches an exact diagnosis."

W. W. Keen.

THE 1920 MEETING.

THE next meeting of the State Medical Society will be held at La Crosse, Wednesday, Thursday, and Friday, September 8, 9, and 10, 1920. We urge men expecting to attend to arrange for reservations well in advance of the meeting. Last year the Minnesota and Wisconsin Bar Society met here and there were about six hundred men in attendance. This city was able to accommodate them very nicely. We feel that this will be in excess of the number that will attend the State meeting here. The bed capacity of the hotels is as follows: The Stoddard Hotel 103 beds, the La Crosse Hotel 60 beds, the Jefferson Hotel 60 beds, the Linker Hotel 58 beds, the American House 25 beds, and the Y. M. C. A. 50 beds.

MATT MCGARTY,
Chairman of Arrangement Committee.

OUR UNUSED CLINICAL FACILITIES.

OFF and on for several years, there have been notices in the Journal calling attention to the opportunity which lies at hand to the physicians of Wisconsin to refresh their minds in the problems of Internal Medicine.

Every year, dozens of men go out of the State to get what they feel is lacking to them and to dust the cobwebs out of their brains by contact with cases demonstrated by other men. The feeling which prompts a physician to leave his work and spend his time and money to better himself in order that his patients may have the benefit of his added knowledge is one to be praised and encouraged in every way. No man can remain in his own little circle for long without wearing a rut around the brim which may become so deep that he can not get out of it.

Milwaukee has the largest general hospital in the State. In order that the hospital may enter as it should enter and permeate the community for the improvement of the health of the citizens there should be a wider use of the abundant material at the hospital. Every hospital should be a center of radiation of knowledge gained by the study of the problems upon the sick in the hospital. A hospital which only cares for its own sick without any

thought of its latent influence for good to the public has failed in its function as a hospital.

From time to time, the Journal has urged the men throughout the State to take advantage of the opportunities afforded at the Milwaukee County Hospital. Possibly, the plan was not definitely outlined. This summer, there is a plan and dates have been set for the courses so that those who care to run in for two weeks may arrange their work at home and try out the Ward Round Classes. Every effort will be made to make the clinics of value. It is hoped now that the profession of the State will make use of the facilities at their doorsteps.

IMPROVEMENT IN HOSPITAL SERVICE.

EVERY state medical association in the United States has its part in the present universal movement for the betterment of hospital service. Every association now has its own committee which is studying the hospital situation in its state in cooperation with the Council on Medical Education of the American Medical Association. The Council has obtained, through reports, correspondence, and other methods, data relative to all hospitals in the country and each state committee has been supplied with the data relating to the institutions in its state. Through their closer familiarity with the hospitals, or by inspections the state committee is in excellent position to verify these data and to make a reliable report to their state association and to the Council.

For convenience and in order to secure uniformity of reports from the forty-eight committees regarding the relative efficiency of hospitals, blanks furnished by the Council call for a rating of all hospitals in classes A, B and C, grouped also according to the special class of patients cared for. This rating is not for publication but will aid the Council in the preparation of a list of hospitals which are considered worthy of approval. These lists are subject to frequent revision so that names of other hospitals can be included as soon as sufficient improvements are made to warrant their being approved. State committees are urged to promptly report to the Council any instances where such improvements have been made.

The purpose of the work is to aid the hospitals in providing for their patients the best possible service and in no way to injure those which are honestly endeavoring to provide such service. Toward this end, every possible assistance will be given to individual hospitals by the Council or by the local state committee in establishing such changes as will make them worthy of approval.

Forty-two state committees have reported progress in connection with the latest survey and thirty-four have turned in reports regarding hospitals inspected and graded, which have more than half the entire bed capacity of all general hospitals in the country. Meanwhile, this work of the Council is not conflicting with, or duplicating the splendid work being done by the American College of Surgeons, the Catholic Hospital Association, the American Hospital Association or other agencies. In fact the work of each agency is evidently complementing that of the others.

At the New Orleans meeting, recently, the House of Delegates of the American Medical Association registered an intense interest in the improvement of hospital service and authorized the trustees to generously provide for that work. This work has been so intimately related to that of the Council on Medical Education that the name of this Council was changed to the "Council on Medical Education and Hospitals."

In brief, further enlargement of hospital work by the American Medical Association is assured and in this work each state is destined to have an important part. Toward this end each association is urged to make its hospital committee permanent and to retain on it those who will not only be active but who also can do the work in the most efficient and unbiased manner. Hospitals, at present, form the closest link between the medical profession and the public and the medical profession should do all it can to aid the hospitals to provide the very best service possible.

FLORENCE NIGHTINGALE.

ON THE 15th of May all over the country, celebrations were held in honor of the one hundredth anniversary of the birthday of Florence Nightingale, to whose vision the world owes a debt of gratitude for the adequately trained nurse.

It would be hard to picture today, a world without trained nurses. Particularly have the last five years shown, not only the benefits to be derived from such care as is given by the adequately trained nurse, but the absolute necessity for this care.

Florence Nightingale, as we all know, was of English parentage, she came of gentle people, and all her life was devoted to bettering conditions in hospitals, particularly in giving better nursing care to those who were unable to demand it for themselves. Her great opportunity came during the Crimean War, when she was finally given authority to organize a Nursing Corps for the care of men wounded on the field of battle, and her work in the Crimea proved, certainly to the English people, that not only was much suffering alleviated, but many lives saved, by proper and efficient nursing care, so that upon her return to England she was given $250,000 with which to start the Nightingale school of nursing.

The first training school in this country, established approximately 50 years ago, in Bellevue Hospital, was organized by a Nightingale sister brought over from England for that purpose and it is only fitting to note here that the woman who may justly be called the Florence Nightingale of the United States of America, Jane A. Delano, was a graduate of this school. It was due to Miss Delano's foresight, vision and patriotism, and great love of humanity, that 35,000 graduate nurses of this country were made available for use, not only with the military forces of our own country, but also with our allies in Europe.

Don't always call the aching joint "rheumatism", says the United States Public Health Service. Bad teeth are sometimes the real cause and it is always wise to consult both the doctor and the dentist. Have an X-ray made of the teeth.

THE JOURNAL CLINIC

WARD CLASSES — MILWAUKEE COUNTY HOSPITAL.

Dr. L. M. Warfield will give a series of clinics in Internal Medicine with Ward Rounds to classes of not more than six physicians. Courses will last two weeks—daily except Saturday and Sunday from 9 A. M. to 12 noon, at the Milwaukee County Hospital, Wauwatosa (seven miles from the center of Milwaukee). Classes will begin July 12 and will be as follows: First course, July 12—July 24; second course, July 26—August 7; third course, August 9—August 21; fourth course, August 23—September 4. There will be no fee for these courses. Make application to Superintendent, Milwaukee County Hospital, Wauwatosa, Wisconsin.

CLINIC OF THE UNIVERSITY OF WISCONSIN.

ENCEPHALITIS EPIDEMICA; A CASE REPORT.

BY C. E. ZELLMER, M. D., AND
WM. S. MIDDLETON, M. D.,
MADISON, WIS.

Encephalitis epidemica, or lethargica, was first observed clinically in this country in November, 1918.[1] Since that time, its epidemiology, clinical course and pathology have been comprehensively covered in the literature (Bassoe,[2] Mills and Wilson,[3] Wegeforth and Ayer,[4] Bassoe and Hassin[5] and others). In view of the relative infrequency of the occurrence of encephalitis of the epidemic type, the following case is presented:

Case: R. B. Age 20 years, 9 months. White, unmarried, male student.

Admitted to the University Infirmary, November 28, 1919.

Chief Complaint: "Pains in back."

History Present Illness (supplemented by friends): The patient has complained of indefinite malaise and inability to concentrate for the past month. The acute symptoms are dated back only three days, at which time headache and general physical depression were noted. For two or three days has had a slight nasal cold. Throat feels raw. No cough. At present the patient complains of an indefinite but sharp left sided abdominal pain, low down and unaffected by respiration, defecation or urination. There are no symptoms referable to the gastro-intestinal, genito-urinary or circulatory systems. For several days there has been noted an indefinite ache in the left ear.

Past Medical History and Family History: Have no bearing on the present illness.

Social History: Occupation during the past summer in the rubber tire plants at Akron, Ohio, is worthy of recounting. However, at his particular task there was no exposure to dangerous chemicals.

Physical Examination: Patient is rather apathetic. While mental retardation is apparent, orientation is accurate.

Head.

Eyes: Pupils are regular, round and equal. They react perfectly to light and distance. Extraocular muscular activity is normal. No disturbance of vision

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[1]Pothier: J. A. M. A., vol. 72, 715, March 8, 1919.

[2]Bassoe, P.: J. A. M. A., vol. 72, 971, April 5, 1919.

[3]Mills, C. K. and Wilson, G.: Arch. Neuro. and Psych., vol. 1, 567, May, 1919.

[4]Wegeforth, P. and Ayer, J. B.: J. A. M. A., vol. 73, No. 1, July 5, 1919.

[5]Bassoe, P. and Hassin, G. B.: Arch, Neuro. and Psych., vol. 11, 24, July, 1919.

nor restriction of visual fields is determined. In fact, all cranial nerves are intact.

Nose: Slight congestion of the mucosa.

Mouth: Tongue is heavily coated. The pharynx and tonsils are diffusely congested.

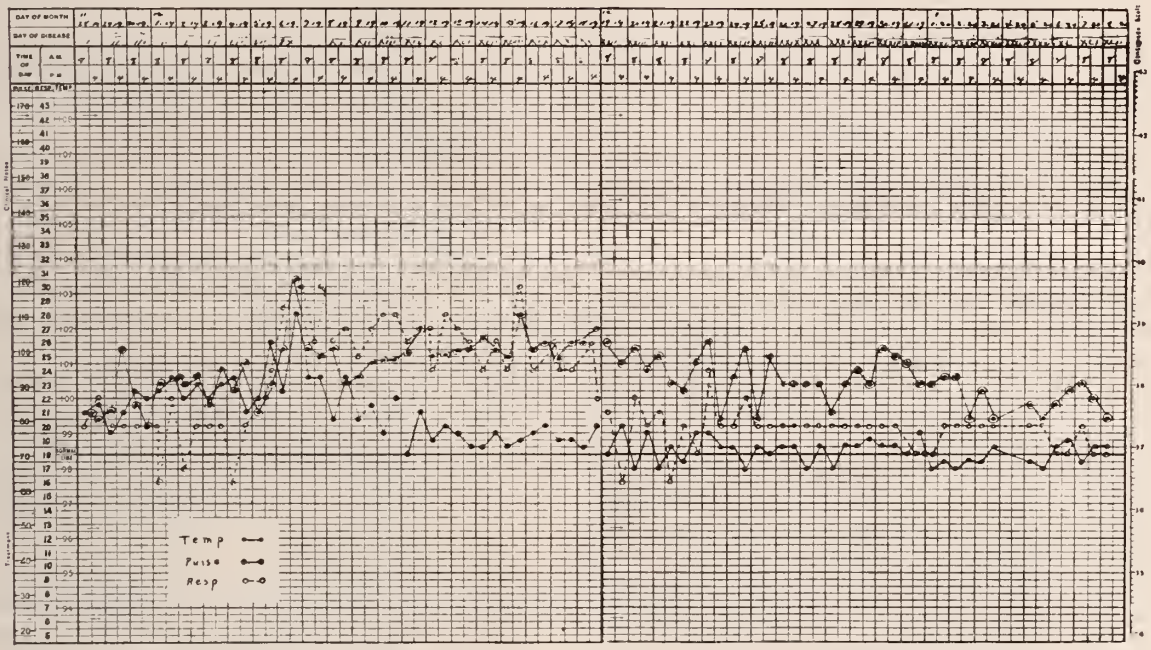
Ears: Normal.

Chest.

Lungs: A higher pitched note than normal with diminished breath sounds is determined at the left apex anteriorly down to the second rib. No evidence of activity.

Heart: Normal in size, rhythm and sounds.

Abdomen: No abnormality of note. Rectal examination negative.



Genitalia: Indefinite tenderness along the course of the left vas, probably from an overlying lymphadenitis.

Nervous System: Reflexes and motor activities are normal. No stiffness of neck, Kernig, Babinski or other special signs.

11-29 and 30-19: Patient complains of vague fleeting pains in extremities and back.

12-1-19: Walked aimlessly about hall last night and reasons for his presence there were incoherent. Mental attitude is more listless. Half closed eyelids or shaded with hand suggest photophobia. No objective nervous phenomena.

Blood pressure: Systolic 138, diastolic 96.

Urinalysis: Negative from pathologic standpoint.

White blood cells 9,900.

Differential count:

Polymorphonuclears 72%.

Lymphocytes 21%.

Transitionals 4%.

Eosinophiles 2%.

Basophiles 1%.

12-2-19: Quite toxic; tongue, heavily coated; lips, dry and cracked. Subjective diplopia is complained of, but examination fails to reveal same. Muscular twitching involving mainly the left external oblique of the abdomen is noted (present also when patient is asleep). No further abnormalities in nervous system.

Blood pressure: Systolic 136, diastolic 96.

White blood cells 10,120.

Widal reaction—negative to typhoid and paratyphoid A and B.

12-3-19: Subjective insomnia contrasts markedly with objective stupor. Not until thoroughly aroused are answers relevant.

Left pupil is contracted. Both pupils react to light and accommodation. Vertical and horizontal nystagmus. Bilateral exaggeration of knee jerks. No disturbance of sensation, sense of position or stereognosis.

Spinal puncture reveals fluid under increased tension but clear. Technical error renders cellular count inaccurate. There was, however, no globulin and only a faint gold sol reaction.

Urinalysis: Negative except for trace of indican.

Blood culture: Negative. Wasserman reaction (blood) negative.

Widal reaction: Negative for typhoid and paratyphoid A and B.

Examination of eyes by Dr. F. A. Davis: Diplopia exists in the extreme right nasal

field. Left pupil is still miotic, but responds more promptly to light and accommodation than does the right. Objects appear larger to the left eye. Ophthalmoscopic examination shows only indefinite bilateral "fuzziness" of retina and slight dilation of veins on the right.

12-4-19: *9 a. m.:* Myosis in the left pupil has disappeared. Muscular twitchings now involve thorax and limbs as well as abdomen and are usually confined to the left side. These movements are coarse and choreiform in type. No other nervous manifestation.

11 a. m.: Weakness of the left levator palpebrae superioris. Pupils are equal, regular and normal in reactions.

3:30 p. m. Reappearance of the myosis in left pupil.

White blood cells 8,400

Differential count:

Polymorphonuclears 68%.
Lymphocytes 25%.
Large mononuclears 2%.
Transitionals 4%.
Eosinophiles 1%.

12-5-19: *9 a. m.:* Burning sensation in sole of right foot. Marked increase in the plantar reflex of both feet with especial plantar flexion of the great toes. Loss of sense of position for right foot and toes. No ataxia. A peculiar catatonic fixation of examined parts in position of examination unless passively replaced—plasticity rather than rigidity of posture.

Blood pressure: Systolic 190, diastolic 116.

Spinal puncture: Fluid under about normal pressure, clear;

Cerebro-spinal fluid: Total cells 54 per cubic millimeter, of which 2% were polymorphonuclear and the remainder mononuclear in type. Globulin and gold sol tests faintly positive. Wasserman: Negative.

Toward evening became restless, irritable, and irrational.

Eye examination by Dr. F. A. Davis: Visual fields full in both eyes. Diplopia persists. Slight divergence of covered eye while fixing with the uncovered. Ptosis of left upper lid is more marked. Pupils are active. The left pupil is slightly smaller and a trifle oval. (Neither pupil dilates much with cocaine; with atropine left pupil becomes more dilated than the right). Eye grounds show blurring of inferior margins of the discs.

12-6-19: *9 a. m.:* Ptosis of both upper lids. Patient is more somnolent. Optic aphasia manifest in improper terminology of objects. Coarse tremor attends voluntary movements—not a true ataxia nor is the muscular power decreased. Marked board-like spasticity of the abdominal muscles, particularly the left.

2:30 p. m.: Lips are cyanotic. Breathing is regular but stertorous. Fingers are very cyanotic and stiff. Bodily twitching involves all the muscles of the trunk and extremities.

No Trousseau or Chvostek; but tapping anywhere about head induces marked orbicular reflex.

Blood pressure: Systolic 150, diastolic 104.

12-7-19: Blood pressure: Systolic 138, diastolic 90. More somnolent.

12-8-19: Complains of pain in the back. Pulse is smaller and more rapid. Catatonic fixation and muscular twitching are less marked.

Hemoglobin 85%.
Red blood cells 5,440,000.
White blood cells 8,560.
Differential count:

Polymorphonuclears 69%.
Lymphocytes 24%.
Transitionals 4%.
Eosinophiles 3%.

12-9-19: Twitching is more marked even in sleep. Soreness and tenderness to pressure over both thighs without tactile or temperature disturbance. Left pupil is still dilated (result of mydriatic) and reacts sluggishly to light and distance; right pupil, miotic and slightly irregular, reacting promptly to light and sluggishly to accommodation. Apparent weakness of the muscles at the right corner of the mouth is not substantiated by tests of muscular power.

12-11-19: Left pupil is irregular. On forced contraction of the muscles of expression get coarse twitching of the platysma. No weakness of orbicularis oris. More tendency to catatonic fixation than for the past two days.

12-12-19: Left abdominal muscles now more rigid than the right.

Blood pressure: Systolic 174, diastolic 122.

12-13-19: Right abdominal muscles—more spastic.

Blood pressure: Systolic 138, diastolic 98.

12-16-19: Gradual subsidence of signs.

Phenolsulphonephthalein excretion is well within normal range.

12-17-19: Periodic piercing pains in legs.

12-20-19: Obstinately constipated.

12-23-19: Bilateral abdominal spasticity.

Phenolsulphonephthalein excretion normal.

1-10-20: Discharged. Residua persist in the form of slight weakness of the right internal

rectus, nystagmus, slight general increase in abdominal resistance and paraesthesia of both thighs.

A diagnosis of encephalitis lethargica was made on the existence of the characteristic somnolence, febrile course and ocular palsy and further substantiated by the elimination of typhoid fever, tuberculous meningitis, cerebrospinal lues, brain tumor, botulism, lenticular nucleus degeneration as in carbon monoxide poisoning and Wilson's disease, coma from diabetes or nephritis, hysteria, dementia praecox and the cerebral form of acute poliomyelitis. The present status of our knowledge concerning epidemic encephalitis permits of the exclusion of cerebral poliomyelitis only by reason of the clinical course. The diagnosis was corroborated by Dr. Peter Bassoe, of Chicago, and by members of the clinical staff of the University of Wisconsin.

This case, in addition to the characteristic picture of lethargy, cranial nerve involvement and febrile reaction, presents an interesting disproportion between the pulse and respiratory rates and the temperature curve. Furthermore, the parasthesias, muscular twitchings, abdominal spasticity and optic aphasia constitute unusual neurological developments. Lastly, the inordinately high blood pressure is not a commonly described finding in epidemic encephalitis.

GALL BLADDER SYMPTOMS RECURRING AFTER CHOLECYSTOTOMY. A CASE OF TRIFACIAL NEURALGIA.

BY J. P. & F. B. McMAHON, M. D.,
MILWAUKEE.

Great progress has been made in recent years in correctly interpreting the signs and symptoms of inflammation of the gall bladder, both acute and chronic. Even greater advances have been made in the standardizing of the surgical treatment of these conditions. Possibly next in importance to our present knowledge as to the proper surgical treatment of chronic peptic ulcer stands cholecystectomy for chronic cholecystitis and chronic cholelithiasis as contrasted with the former procedure of routine drainage operations. The recent literature has been very instructive on the indications for cholecystectomy versus cholecystostomy and it is not our purpose here to review it. The fact remains that a certain number of gall bladder drainage cases need a cholecystectomy to permanently relieve acute and chronic cholecystitis. Most of the cases we see that present themselves with symptoms following gall bladder operations and referable to the gall bladder are those in which a cholecystostomy was the operation performed.

We wish to report two cases of secondary operations on the gall bladder which emphasize these facts and which are interesting and instructive.

CASE 1. First examination November, 1917. Female —Age 26—Married, no pregnancies—a negative previous history except that in 1912 she was operated on elsewhere for an acute gangrenous appendicitis and the appendix removed with a good recovery and a year later she was operated on elsewhere for an acute empyema of the gall bladder without stones, and a cholecystostomy performed. Following her gall bladder operation she was fairly well for two years. Two years ago and five weeks ago respectively she had attacks of sharp pain and tenderness in the epigastrium and right costal margin with anorexia, regurgitation of food, gas eructations coming on at irregular intervals and simulating the digestive symptoms prior to her appendix and gall bladder operations. The last attack had its onset five weeks ago, was progressively worse and more severe with marked qualitative and quantitative food dyspepsia until now she had lost thirty pounds in weight and considerable strength. During these two attacks described there had been no chills, no appreciable fever, and no jaundice. She had been under medical care and treatment during both of these attacks without apparent benefit. Physical examination showed evidence of emaciation and weakness which were exaggerated by considerable apprehension and discouragement. Slight tenderness and rigidity were elicited over the upper quadrant of the abdomen. The balance including laboratory examinations were negative.

Our diagnosis was that of chronic cholecystitis, recuring after acute cholecystitis and cholecystostomy. Operation was advised.

Findings at operation: Marked chronic cholecystitis, gall bladder wall oedematous, dull and sallow color: many fine punctate ulcerations in the mucosa; bile thick, stringy, granular and black; regional lymph glands moderately enlarged and hard. Negative exploration of common duct, head of pancreas and other adjacent organs.

Operation: Cholecystectomy—one split tube with gauze drain. Her recovery was uneventful and the improvement of her gastric and abdominal complaints was very prompt. The relief has been complete and permanent now for a period of two and one-half years.

In April, 1919, we operated on her for a right tubal pregnancy with a normal convalescence afterward.

DISCUSSION.

There is no question as to the advisability of draining an acute empyema of the gall bladder if you suspect from the clinical findings that the infection is a virulent and severe one or if the pa-

tient's general or local condition does not warrant its removal. Or too, if the surgeon is operating under unfavorable conditions. However, the pathology of an acute empyema of the gall bladder alone is not a contra-indication per se to cholecystectomy. Ordinarily the operation of cholecystectomy is not so much more difficult or harassing to the patient in the hands of a competent surgeon and under favorable surroundings and conditions. Some recent statistics would lead us to believe that the mortality from cholecystostomy is somewhat higher than that of cholecystectomy, due no doubt to the fact that the acute infected cases and the ruptured gall bladder cases are usually the ones where cholecystostomy is the operation selected. This group of cases will naturally always have a relatively higher mortality irregardless of the operation of choice.

However, when a patient, who for good reasons, as in this case, has had a well defined pathological gall bladder drained, and returns with recurring or persistent symptoms the better policy or procedure should be to select a favorable time and reoperate, at which time a cholecystectomy is clearly the operation of choice assuming of course that the symptoms and the pathology are referable to and identified with chronic cholecystitis. Some surgeons feel that if there be infection or moderate obstruction in the common duct associated with evidence of chronic pancreatitis that cholecystostomy is still the operation of choice. Given a case of this type requiring a secondary interval operation I believe cholecystectomy to be indicated with either drainage by means of a catheter through the stump of the cystic duct or through an incision in the common duct (choledochotomy) if necessary. Of course if there be stones in the common duct a choledochotomy is indicated in addition to the cholecystectomy.

Case 2. First examination March 25, 1919. Female —Age 32—married—one child 7 years of age. Previous medical history: Acute articular rheumatism at 21 and 31 years of age; chronic rheumatic complaints at times since initial infection. Last attack of acute articular rheumatism in February, 1918; duration eight weeks. In 1912 was operated on for a well defined case of acute appendicitis elsewhere and made a satisfactory recovery.

Her present complaints are: Pain in the apigastrium, loss of weight and appetite, pain and limitation of motion in the right upper and lower jaw, which are exaggerated on moving the jaw in mastication and in talking.

Gastric complaint: Four years duration—gradual onset, and progressive recently—no definite ulcer history though some food ease and some periodicity present; duration of attacks one to three days; nausea present but no vomiting; onset any time and apparently precipitated by dietetic indiscretions; pain is either colicky or burning or a dull ache in type, located in the mid epigastrium and referred through to the back. Cholecystostomy in 1916 elsewhere without relief; no gall stones found at that time; past six months symtoms worse and has lost thirty pounds in weight.

Jaw complaint: Apparently independent of gastric complaint, although some of weight loss may be attributed to it. History of right facial neuralgia involving the right superior and inferior maxillary branches over a period of two years, becoming worse and because of pain unable to move jaw through more than about one-third of normal excursion. In January, 1919, had a number of teeth extracted but without relief and the gums locally were very tender.

Physical examination: Gum over upper right maxillary area painful; limitation of motion of jaw allowing separation of teeth about one inch. Mitral regurgitation of the heart fully compensated; area of abdominal complaint in the epigastrium but at times alleges that the pain is diffused over upper abdomen and bilateral resembling somewhat a typical attacks of gastric crisis according to my notes made at the time. Neurological examination negative. Nose and throat examination negative including tonsils.

Important laboratory findings: X-ray examination of the stomach and of the kidneys, negative. Re-ray of stomach was negative. X-ray of maxillae and of teeth negative, no bone changes, blood Wasserman negative, urinalysis (catheterized specimen) negative.

Our resumé and conclusions were that here was a patient with an upper abdominal surgical lesion with a gastric complaint having had at least one former abdominal operation without relief, and who had no neurological findings. We made a tentative diagnosis of cholecystitis (90%) and duodenal ulcer (10%) as an alternative, despite the negative fluoroscopic and Roentgenographic examination of the stomach. Also that she had a mitral regurgitation that was well compensated at all times, and further that she had a right trifacial neuralgia involving the two lower branches of the right trigeminal nerve, and a history of acute articular rheumatism on two occasions, the last attack in February, 1918, or about one year previous.

We advised operation on the gall bladder including an examination of the duodenum and stomach, and alcoholic injection of the branches of the trigeminal nerve on the right side for her neuralgia.

She returned home for about two months. On May 1, 1919, we re-examined her, as she was complaining of sudden sharp and continuous severe pain and soreness in the epigastrium for the previous twelve hours radiating through to the back with nausea but no vomiting. Anorexia marked for the past two weeks; no chills; no fever; no jaundice. We readvised operation.

Operation May 2, 1919. Cholecystectomy for chronic cholecystitis with three small stones, one of which was impacted in the first portion of the cystic duct. Moderate degree of chronic adentis of the regional lymph glands, and a slight degree of chronic pancreatitis involving its head. Negative palpation of the common and hepatic ducts. Negative examination of stomach and duodenum. Split tube with gauze as a drain.

Her convalesence from the cholecystectomy was uneventful.

May 16, we injected 2 cc. of 80% alcohol into the proximal region of the divisions of the fifth nerve for her neuralgia under local anesthesia following the method of Levy and Baudoin.

The patient was promptly relieved of her abdominal and gastric complaint and has gained in weight until now she weighs 145 pounds.

The jaw complaint was not apparently improved except that following the immediate effects of the alcohol injection she could open her mouth wider and possibly had a little less pain.

December 10, 1919, in view of her history of acute rheumatism and her chronic rheumatic complaint and her persistent facial neuralgia, tonsillectomy and adenoidectomy were advised and performed with a hope of benefiting her neuralgia and also as a prophylaxis against recurring attacks of acute and chronic rheumatism. A general anesthetic was administered on account of the difficulty in opening her jaw and after the tonsils and adenoids were removed the alcohol injection was again repeated both via the external route under the zygoma and also by injecting and infiltrating deeply behind and above the last upper tooth from the inner approach. After about three weeks subsequent to the tonsillectomy and her second alcohol injection she reports that she has been completely relieved of the pains in her face as well as of her rheumatic pains elsewhere.

DISCUSSION.

It is important to note that both of these patients had their appendix removed at former operations. This patient's gall bladder and reflex gastric history is interesting and instructive. It is reasonable to assume that if she had gall stones in 1916 when she was operated upon elsewhere they would have been detected, or at least they probably would have been expelled with the biliary drainage. The attacks she had prior to her first gall bladder operation were those of chronic cholecystitis, but were not improved to any appreciable degree by the cholecystostomy, and the drainage operation apparently did not in any way clear up the chronic inflammation that led to the formation of the stones we found at operation. The striking fact from the therapeutic standpoint is that cholecystectomy cured her.

The difficulty at times of frankly differentiating between cholecystitis with or without stones and chronic gastric or duodenal ulcer either with or without complicating peri-gastric inflammatory changes is emphasized in this case. Various writers in reviewing large series of either type of case report a legitimate percentage of error in the differential diagnosis in from 5% to 10%. Probably 5% is a reasonable accurate estimate of the cases of gall bladder disease simulating ulcer and vice versa that can not be differentiated clinically. The accuracy has been increased considerably since the advent of intelligent and careful Roentenological examinations to exclude the stomach and duodenum except in that very small number of cases that is now rapidly approaching the vanishing point where the X-ray findings are in error.

Her facial neuralgia was not the typical severe type usually described as tiedouloureux, but constituted a persistent and severe type of neuralgia that at times bothered her more than her abdominal complaint. Whether the alcohol injections or the removal of the tonsils and adenoid tissues or both contributed to the symptomatic relief of her neuralgia remains to be seen. If the tonsils served as a focus of infection she should be permanently relieved. If she has recurrence we shall repeat the alcohol injection. That the infected gall bladder could have been considered as a causative factor in the facial neuralgia is improbable as relief did not come until after the tonsils and adenoids were removed. The teeth that were sacrificed prior probably were not at fault.

CLINIC OF MILWAUKEE COUNTY HOSPITAL.

LOUIS M. WARFIELD, A. B., M. D.,
MILWAUKEE.

It is safe to say that more than half of the patients who come to a doctor's office complain more or less about their stomach. Some will give as their only complaint the indefinite group of symptoms known among the laity as dyspepsia. Others will have pain after meals and other symptoms which simulate gastric or duodenal ulcer. This simulation has gone so far as to lead to operation for supposed gastric ulcer, but the stomach was found to be quite normal. No organ in the body is so subject to reflex disturbances of a functional nature as is the stomach. A nasty smell to some

people causes nausea and vomiting. The sight of blood to others causes nausea or vomiting, or both. A sudden fright may make some sick at the stomach. Some are nauseated when subjected to violent pain, as a sprained ankle, or fractured bone. In every infection there is distaste for food. Instances could be multiplied of the intimate relationship of the stomach to changes in various organs. One more only will be mentioned. Practically all pathological conditions in the abdomen, including the pelvis, cause some disturbance in the stomach.

We present here a series of three cases all of whom complained only of the stomach and in all of whom the very common disease, tuberculosis of the lungs, was the actual pathological cause, the stomach symptoms were only reflex, probably from vagal irritation. Such cases have been classed by some under the euphonious name of vagotonia. It is not denied that there is such a condition as vagotonia, but it is suggested that this is a group of symptoms, a syndrome so-called, which in most if not all cases is caused by some specific disease. The closer we examine the patient and the more carefully we study him the oftener we will find some real cause for the syndrome.

Case 1. A young farmer boy, 18 years old, came in complaining of a heavy feeling in his stomach with gas after eating. He could not eat anything without causing him acute distress. He felt puffed up, there was constant belching and he had gradually reduced his meals to almost nothing.

His parents and brothers and sisters were all healthy. He had never been ill except with flu in the spring of 1919. Due to lack of farm help he had to work when he was sick. He seemed to get over this but found that he tired easily, began to have these stomach symptoms and lost weight. There was no cough, no sweating, no fever, no bowel disturbance.

On examination he was a tall, well proportioned boy with a clammy skin which seemed a bit too large for his muscles. There was no fever, the pulse was not rapid, blood pressure was normal, the exercise response to hopping on one foot was normal. He insisted that it was his stomach which troubled him. The reflexes, the heart, the abdomen were normal.

In the chest there were dullness over the left posterior apex, spasm of the fibres of the trapezius, increased breath sounds, increased whispered voice sounds and a few crackling rales on coughing. The right apex showed a little more bronchial breathing than normal, but no definite rales were found.

X-ray examination of the stomach revealed an apparently normal organ. Stereoscopic chest plates showed spotty infiltration in both apices in the first and second interspaces with enlarged hilus shadows and increased linear markings in both vertebral and first interspace trunks. The plates were a surprise, as frequently they are, in that they showed a much more widespread involvement than could be located by physical examination.

This boy was told that he had tuberculosis, was advised how to live. He reported back in three months that he had gained 20 pounds and was eating anything he wanted. He was not conscious that he had a stomach.

Case 2. A young married woman seen in September, 1919, 34 years old, has complained of stomach trouble off and on for the past twelve years. The family history was negative. She, herself, has usually had good health. Menstruation has always been painful and usually is early. She has had two children, 8 and 9 years old. She has been treated for ulcers of the stomach for several years, having run the gamut from osteopath to mud baths. Four years ago the mere sight of food gave her pain in the stomach so that she could not eat. Usually her appetite is good, bowels are slightly constipated. Last winter (1918) she had "flu."

Her reason for seeking further advice was that about six weeks ago (August, 1919), she had a sudden, agonizing pain in the pit of her stomach one morning about 9 o'clock. She had nausea, chills and headache, but no vomiting and no fever. She was in bed for a week. In about two weeks she had another attack with vomiting. Never at any time did she vomit blood.

This case was suspected of having duodenal ulcer and the violent recent attack suggested a perforation with perigastric inflammation. Examination was therefore directed particularly toward the stomach. Physically she was a faily well nourished woman, with slender chest and narrow costal angle. She had an unmistakable pungent axillary odor. This was suggestive of tuberculosis. There was lagging at the right apex, narrowing of the apical resonance, slight spasm of the muscles in the suprascapular fossa and slightly more impairment of the percussion note than seemed normal. The breath sounds were harsh at the upper right front and apex and particularly harsh at the hilus on both sides, more on the right. No definite rales were heard.

X-ray of stomach showed a *very* small six hour residue in a long J-shaped organ which was freely movable. The head of the barium column was at the hepatic flexure. The cecum was slightly fixed, but the barium could be manipulated onward. Haustra were well outlined. Further barium filled stomach readily with the lower border below the level of the iliac crests. Peristalsis was slow, there were no abnormalities of the curvatures, the cap appeared normal and the pylorus was not fixed. In 30 hours the intestine was empty of barium. In the chest there were much enlarged hilus shadows, from both sides broad fan-shaped linear, speckled streaks extended outwards into lungs. Both vertebral trunks were thickened and the right apex was cloudy. She reacted positively to intradermal old tuberculin 1/10 mg.

Attention to hygiene and proper surroundings has

greatly improved her condition. I do not feel that she had any pathological process in her stomach.

CASE 3. A man 38 years old came in August, 1919, complaining of stomach trouble. He was married, had two children. His family history was absolutely negative. He insisted that he had never been really ill in his life except for the stomach trouble which had bothered him for four years. There were heavy feeling and belching after eating. There was no pain or vomiting. He had headaches and dizziness at times and had lost weight. He was tired. He wanted to eat, had an appetite, but was afraid to eat because of the discomfort after eating. The bowels were somewhat constipated.

On physical examination he was a poorly developed and nourished man with diminished expansion of the right side of chest, impaired percussion note both apices with Pottenger's sign at right posterior apex. There was wasting of the musculature. On auscultation there was marked granular breathing at both apices but no definite rales were heard. The temperature was 99.2, pulse 96 to minute. No other abnormalities were found.

Fluoroscopic examination of stomach revealed a low, atonic, J-shaped stomach, no six hour residue, normal cap, sluggish peristalsis. No pathological lesion was found. In the chest there were adhesions between right base and diaphragm, hazy apices, increased hilus shadows and streaking toward both apices. There was narrow, long heart. Stereoscopic chest plates confirmed the fluoroscopic findings, revealing very marked increase in linear markings toward apices.

This patient has improved following a regime directed toward cure of tuberculosis.

I have called attention already to two suggestive signs in early tuberculosis. One is the curious, indescribable, pungent, disagreeable odor which is given off from the axillae. The other is the great irritability of the muscle fibres which causes the few actually struck by the finger to contract as an evanescent nodule appearing visibly and palpably beneath the skin and causing a visible wave of wormlike, rapid contraction towards the origin and insertion of the fibers. In the pectorals one can pick out all the fibers seriatim by sharply striking the muscle with a finger from above downwards or from below upwards. This phenomenon is known as myoidema. Neither of these signs is diagnostic but when both are present it is very suggestive of tuberculosis and directs attention to the very careful examination which must be made to prove or to disprove the presence of tuberculosis or of tuberculotoxemia.

Every doctor knows of at least one young man or woman who suffered so severely with stomach trouble that it was impossible to eat without great distress, or actual pain, who went off on a vacation and in a few days was eating sour dough and greasy flap-jacks which the camp cook made and never had a signal of distress from the stomach. Not all such cases are suffering from what is called occult tuberculosis, but many are, as I know from a rather large experience. The point is to leave no stone unturned to make a definite diagnosis. Above all do not let the patient make his own diagnosis in which you may concur without giving him the benefit of your expert knowledge. It is very flattering to the patient, no doubt, to have the doctor agree with him in the diagnosis of his case, but it is not so flattering to the doctor. This might be looked upon as a plea for more careful history taking and more painstaking examination. If you cannot spare the time, or have not the necessary equipment, then send your suspect to some one whose business it is to give time and study to such cases. Possibly we may be able to reduce the number of inmates in our sanatoria for tuberculosis. Who knows? It is worth a real trial.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin;

LABORATORY WORKERS.

BY W. D. STOVALL, M. D.

For the past several years there has been a considerable growth in the popularity of laboratory work as an aid to medical diagnosis. In many instances this has been due to the recognition by medical and surgical practitioners of the need of laboratory help in making correct diagnoses and in carrying out treatment. In other cases there has been a limited recognition of the importance of this work and so called laboratories and laboratory workers have been added to the office and equipment as a financial investment much as it has been the habit with some to place in a most conspicuous place in their office a highly polished microscope carefully covered with a bell jar.

From my point of view, anyway, it seems that a great number of the profession, who are employing laboratory assistance in their practice, have recognized only in a limited way the importance of the work as an aid in their practice.

This statement seems to be borne out because of two outstanding features in the relation of the laboratory and the laboratory worker to the profession.

In the first place it is seldom you can find a man prominent in the practice of medicine or surgery who will admit that laboratory diagnosis is a distinct branch of medical practice and a real specialty. The usual attitude is that they themselves are competent to do the laboratory work but are prevented from doing so by a rushing practice. This same attitude is assumed when there is a conflict in the laboratory and clinical findings. In such cases the clinician usually assumes an arrogant air, and says something about poor laboratory technique. In other words the man who specializes in laboratory diagnosis is reduced to the menial position of a technician, and not allowed the dignity of a specialty in the field of medicine. It is hard for me to see that there is any essential difference in the man who uses the stethoscope and the man who uses the microscope and platinum loop. They both must be technicians.

The second feature in the relation of the clinician and the laboratory is the accepted meaning of the word technician. The demand for technicians is far in excess of the supply. Physicians are inquiring every day for technicians, and it is interesting to see what they are looking for. In the great majority of cases a technician means some young lady who has had a six weeks' course in a laboratory where a good many examinations are made, or one who has had a short course of training in some school where such work can be had. Frequently these technicians are graduate nurses who without previous courses in the sciences of bacteriology, chemistry, or microscopy take a short course in clinical microscopic diagnosis. With this meager training they pass out into offices to assist doctors in making diagnoses of obscure conditions and to point out the indication or contraindication for this or that treatment. Does their training fit them for this responsible task? Who is responsible for this influx into the field of laboratory diagnosis of large numbers of poorly trained workers?

The first question, is the training of such technicians adequate, hardly needs discussion. For any physician to accept in his office such laboratory assistance is no better than for one whose hearing is seriously defective to pretend to diagnose pulmonary tuberculosis by the usual chest signs. These assistants can be used in laboratories where they are constantly under the supervision of one who has by years of experience and study learned how to avoid the errors which lead to false or inconclusive diagnosis, but to say that they can assume the responsibility which they must assume as laboratory diagnosticians in a physician's office, or with a group of physicians, is quite another matter. It might be said, of course, that such technicians are under the supervision of medical men. It should be understood, however, that medical men are taught by study and experience more particularly the clinical side of medicine, and are therefore not fitted without special training to supervise laboratory work.

Perhaps my point can be made clear by citing concrete cases. It has been only a few months since a young lady called to see me who was to become the technician for a group of rather prominent surgeons and internists. She was announced to the profession as coming to this group from associations which carry considerable prestige. She wanted to know if I could supply her with stains and solutions, which would be needed from time to time. Upon inquiry I found that although she proposed to do certain chemical analysis she did not know what a normal solution is and did not, of course, know how to make a normal solution. How is she to operate a laboratory and how much dependence can be put in results obtained by such a worker? As for the stains, she said that she had never prepared her own staining solutions, and did not know how to prepare the stains used in Gram's method of staining. She informed me that where she had been working her stains and solutions were prepared for her, and that she thought that in the new position she would be able to buy the materials ready for use. This is not an unusual but a very usual type of technician being employed in the offices of physicians throughout the country. This young lady was a graduate of a normal school, she taught two years; and then concluded that clinical laboratory work would be easier, and secured a position as a helper in a large laboratory. She went out a few months later as a technician. This is the way most of them are made. Her diagnosis in suspected cases of diphtheria and other bacterial diseases could not be relied upon.

Another technician of this same type came to see me to learn to make vaccines. She was a graduate nurse. I asked if she had had courses in bacteriology and she informed me that she had not but had been told that she did not need bacteri-

ology in order to make vaccines. She was surprised when I told her that she was not qualified to do the work and could not qualify because of deficient preliminary training. After explaining to her the difficulties frequently involved in securing pure cultures for vaccines, and the importance of tests, animal and cultural, to determine sterility, she quite agreed with me that she could not undertake such work.

If it is admitted then that technicians trained such as shown above have not the training to assume serious responsibility, who is responsible for this great demand for this type of worker? In my opinion the trained laboratory workers, meaning men conducting university and commercial laboratories, must share the responsibility for this error with the clinicians. In a big laboratory there are always a number of positions which can be filled by people of average intelligence without any very special training. This is so because all of the important procedures, such as making solutions, stains and other things, which require an understanding of the fundamentals involved, are done by those who are qualified for such work by training and experience. Because the large laboratories employ this untrained or meagerly trained help, the impression that this same sort of help is satisfactory for the work in a physician's office has been growing rapidly, and the man who has taken time to prepare himself for his specialty has not corrected the impression.

This idea is so common that on every hand one hears remarks depreciating or underestimating the responsibility involved in doing routine laboratory work. There are certain routine determinations which in themselves do not require any very special training, but the whole story of laboratory work is not told in one determination, but requires thorough comprehension of the whole subject to be able to have things brought to the point where the simpler determinations can be carried out.

Anything to be useful for common practice must be reduced to a routine method. The principles of physiology, pathology, chemistry, and other sciences must be systematized to the point where they can be used before they become practical. The practice of medicine is no more nor less than the routine application of these laws and principles. However, no one would agree that a physician should be allowed to practice after being taught for a few months what may be considerd routine practice in given cases. He needs more to be accurate and resourceful, and so does the laboratory worker.

Clinicians must share part of the responsibility for this error because they have been employing poorly trained people to do their laboratory work, without inquiring into the matter sufficiently to be properly informed about the condition. They perhaps have depended too much upon the prestige, which associations or a short course in institutions of large reputations carry. They have expected that anybody from such institutions would be qualified, and the institution has not perhaps realized how it has been violating its obligation to the profession by not living up to its reputation. It behooves medical men to look carefully into the training of those with whom they expect to be associated, and upon whom they will place responsibility involving human welfare.

It is most certainly to be regretted that half trained people are entering laboratories as qualified diagnosticians. The practice should be discouraged by all who are in a position to do so, and can be prevented by a cooperation between the clinical and laboratory workers.

The practicing physician and the laboratory man have no need to fuss. They should meet on common ground and work together. Clinical and laboratory work are of equal importance. The laboratory man who exalts himself above the practitioner shows thereby that he has not realized the scope of the problems which are to be solved, and destroys much of his usefulness to mankind in the field of medicine. The opposite is also true.

It is not possible for every individual physician to have associated with him a highly specialized laboratory man. The problem can be solved, however, by a group of men in which one man can be prepared to do the laboratory diagnosis. Association of all medical men into groups which will permit of such an arrangement can not be expected immediately, but much, if not all, the laboratory work required can be supplied to individual practitioners by the use of laboratories which should be conducted with all hospitals, and by taking advantage of the laboratories developed among groups of medical men.

WITH CHARGE.

BY W. D. STOVALL, M. D.

In a recent issue of The Journal it was announced that through the United States Public Health Service we had been granted the privilege of using penalty envelopes and labels for sending

packages through the mail to and from the state laboratories. The arrangement was made by having the director of these laboratories appointed assistant collaborating epidemiologist of the United States Public Health Service. As a result of this arrangement it was announced that as soon as labels could be printed that physicians, health officers and others who use the laboratories could send specimens to us without affixing postage. In other words, after the specimen had been collected the package could be dropped in the mail box without postage as the label on the mailing case would be a penalty label. It is with a great deal of disappointment that it is announced that this privilege can not be used. All packages coming to any of the laboratories, the Laboratory of the State Psychiatric Institute at Mendota, the State Laboratory of Hygiene at Madison, and the State Branch and Cooperative Laboratories located in Rhinelander, Superior, Oshkosh, Wausau, and Kenosha must have postage affixed.

To explain fully the situation a copy of the letter received by the State Board of Health from the Surgeon General of the United States Public Health Service is given below:

"The Public Health Service has been advised by the Post Office Department that it is not permissible to furnish penalty envelopes or labels to private individuals for the purpose of transmitting laboratory specimens in the mail without payment of postage.

"The following excerpt from the ruling of the Post Office Department is quoted for your information:

"Under the law governing the exercise of the penalty privilege, embodied in Section 496, Postal Laws and Regulations, it is permissible for officers of the government to furnish penalty labels with return address to private individuals solely for the purpose of obtaining official information and endorsements to be either written or printed. Penalty envelopes or labels may not, therefore, be furnished to private individuals to transmit in the mails without payment of postage specimens for diagnosis or any other matter except written or printed official information and endorsements.

"The furnishing of penalty envelopes or labels to physicians and others for the purpose of mailing laboratory specimens must, therefore, be discontinued, and any penalty envelopes or labels which have already been furnished for this purpose must be recalled. Hereafter, in mailing laboratory specimens, postage must be paid.

"Respectfully,

"H. S. Cumming, *Surgeon General.*"

However, all specimens for diagnosis can pass through the mail as letter mail at parcel post postage rates. To explain this more fully, there are three parcel post zones in this state. The postage which is necessary to bring a specimen from the third zone is, of course, more than that which is required to send a specimen from a location in the second zone and so forth. But from the most remote parts of the state our diphtheria and sputum outfits can be returned to the laboratory in Madison for six cents (6c). Physicians living in the first zone from Madison can return specimens to us for five cents (5c); those in the second zone for the same charge and those in the third zone for six cents (6c). At these rates specimens for diagnosis are handled in the mail as letter mail, and should reach us promptly. Below is a copy of a letter received from the Postal Department concerning the mailing of specimens for diagnosis:

"In reply to your letter of the 3d instant, you are advised that the accompanying bacteriological specimen, which appears to be put up in the manner prescribed by Section 473, Postal Laws and Regulations (which supersedes Section 495, Postal Laws and Regulations), constitutes mail matter of the fourth class and is chargeable with postage at the rates set forth in the accompanying Circular III of this office. The written matter in the blank spaces on the form enclosed with the specimen is regarded as for the purpose of description and does not affect the rate of postage chargeable thereon.

"Respectfully,

"A. M. Dockery,

"Third Assistant Postmaster General."

The above letter is quoted because many physicians send specimens of sputum and diphtheria swabs to us with regular letter rate postage affixed. This is sometimes due to the fact that the physician wishes the specimen to reach us as soon as possible and does not know that the package will go through the mail as letter mail under parcel post rates. Sometimes letter rate postage is used because the local postmaster requires it. This is due to the ignorance of the postmaster to the ruling of the department in Washington. When such difficulty arises we are glad to furnish your postmaster with a copy of the letter from the department in Washington.

BIRTH STATISTICS, 1918.

Washington, D. C., May 10, 1920.—In the birth-registration area of the United State 1,363,649 infants were born alive in 1918, representing a birth rate of 24.4 per 1,000 population. Of this total number of infants born alive 1,288,711 were white and 74,938 were colored. The total number of deaths in the same area was 1,014,620, or 18.2 per 1,000. The births exceeded the deaths by 34.4 per cent. For every state in the registration area, for most of the cities, and for nearly all the counties, the births exceeded the deaths in many cases by considerable proportions. The mortality rate for infants under 1 year of age averaged 101 per 1,000 live births. The foregoing are among the facts brought out by the annual compilation of birth statistics by the Bureau of the Census.

The birth registration area, established in 1915, has grown rapidly. It comprised in 1918, as in 1917, the six New England States, Indiana, Kansas, Kentucky, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Utah, Virginia, Washington, Wisconsin, and the District of Columbia, and had an estimated population of 55,813,339, or about 53 per cent of the estimated total population of the United States in that year.

COMPARISON WITH 1917.

The birth rate for the entire birth-registration area fell below that for 1917 by two-tenths per 1,000 population; but the death rate was greater by 4.1 per 1,000 than in 1917. Thus the excess of the birth rate over the death rate for 1918, which amounted to 6.2 per 1,000 was somewhat less than the corresponding excess for 1917, 10.5.

INFANT MORTALITY.

The infant mortality rate—that is, the number of deaths of infants under 1 year of age per 1,000 born alive—throughout the birth-registration area as a whole was 101 in 1918 as against 94 in 1917. This is equivalent to saying that in 1917 of every 11 infants born alive 1 died before reaching the age of 1 year, whereas the ratio in 1918 was about 1 in 10. Among the 20 states these rates ranged from 64 for Utah to 140 for Maryland, and for the white population separately the lowest and the highest rates were 63 for Utah and 126 for Pennsylvania.

The infant mortality rates vary greatly for the two sexes and for the various nationalities. The rate for male infants in 1918, 111 per 1,000 live births, was nearly 23 per cent greater than that for female infants, which was only 90.4. When the comparison is made on the basis of race or nationality of the mother a minimum of 71.4 is shown for the infants with mothers born in Denmark, Norway and Sweden, and a maximum of 172.4 per 1,000 births for infants with mothers born in Poland, while for Negro children the rate was 163.

PLURAL BIRTHS.

The reports from the registration area show the birth of 15,342 pairs of twins and 147 sets of triplets in 1918—in all 30,123 live births, or a little more than 2 per cent of the total number born.

NUMBER OF CHILDREN PER FAMILY.

The reports for 1,252,552 of the births occurring in 1918 contained information as to number of children in order of birth. Of these reports, 345,027 were for the first child born to the mother, 264,964 for the second child, 192,339 for the third, 136,366 for the fourth, and 95,963 for the fifth. In the remaining 217,893 cases, or 17.4 per cent of the entire number for which information on this point was obtained, the total number of children born by the mother was 6 or more; in 38,343 cases it was 10 or more; in 1,820 cases, 15 or more, and in 58 cases, 20 or more. The total number of children ever born to the mothers of these 1,252,552 babies of 1918 was 4,109,309, or 3.3 per family. The reports for 1,189,682 mothers of 1918 contained information as to the entire number of children now living and gave a total of 3,461,110, or an average of 2.9 living children in each family.

ANTI-VACCINATIONIST IN POLAND.

American Red Cross doctors in charge of the fight against cholera in Poland, when that disease made its appearance in Kowel last January, had a great deal of difficulty in persuading the people to submit to vaccination. Their reluctance amounted at first almost to actual rebellion, and many of them frankly preferred death.

The secret of this popular antagonism dates back a few years to a time under the Russian regime, when a similar cholera scare alarmed the community. At that time the Russian authorities, determining on vaccination, declared martial law and began forcibly to vaccinate the people. These harsh methods not only aroused popular anger, but were in many cases followed by tragic consequences due to improper sterilization. Many cases of serious infection, loss of limbs, and even of life, resulted. In the end the people rose and threw the Russian military doctor into the town well.

The Americans used different means. They started a local educational campaign, using printed posters, and got all the civil and military employees to volunteer to be inoculated. Plenty of vaccine had been brought from Red Cross headquarters at Bialystok, and very soon the popular mind was opened to the dangers of the epidemic and the townspeople began coming in, by twos and threes, and then in crowds.

As a result, the threatened epidemic lasted only three days, and only fifteen lives were lost.

Patient—"Doctor, what I need is something to stir me up—something to put me in fighting trim. Did you put anything like that in this prescription?"

Doctor—"No. You will find that in the bill."

Keeping physically fit is the first rule to be observed in keeping well, says the United States Public Health Service. Exercise is necessary to health.

"Mary," said the sick man to his wife, when the doctor had pronounced it a case of smallpox, "if any of my creditors call, tell them I am at last in a position to give them something."—*Suspi News.*

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Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
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Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DANE COUNTY

Dr. George B. Eusterman of the Mayo Clinic, Rochester, was the guest of the Dane County Medical Society at its regular monthly meeting held in the Association of Commerce assembly room, April 13. He gave an instructive lecture, with lantern slides, on the medical and surgical aspects of gastric ulcer.

KENOSHA COUNTY

The regular meeting of the Kenosha County Medical Society was held April 14 at Kenosha, fourteen of the members of the Racine County Medical Society also being present. Dr. G. Frank Lydston of Chicago, who has gained fame for the discovery and practice of the theory of implantation of glands, gave one of the most interesting lectures ever given before the society. A business meeting and luncheon followed the lecture.

MILWAUKEE COUNTY

The Milwaukee County Medical Society held its regular monthly meeting, May 13, at 6:30 P. M. at the Republican House, and was a joint meeting with the Wisconsin Surgical Association. After the dinner, the following program was given: "Tuberculous Kidney," Dr. A. G. Sullivan, Madison; "The Surgical Aspect of Goiter," Dr. S. J. Seeger, Milwaukee. Dr. J. J. Bellin of Green Bay also read a paper.

MILWAUKEE MEDICAL SOCIETY

At the regular meeting of the Milwaukee Medical Society held in the society rooms, May 11, at 8:00 P. M., the following program was given: "Puerperal Septicemia—A Case of Unusual Interest," by Dr. R. W. Roethke, and "Anaesthesia and Analgesia in the Treatment of Dystocia," with a lantern slide demonstration, by Dr. C. H. Davis. A meeting of the Book and Journal Club was held after the program and also a meeting of the Council.

RACINE COUNTY.

The regular meeting of the Racine County Medical Society was held at the Elks' Club rooms, April 1. Dr. J. Gurney Taylor, Milwaukee, addressed the meeting on the subject of "Nutritional Disturbances in Infancy in Relation to Feeding." The attendance was good.

SUSAN JONES, M. D., *Secretary.*

ROCK COUNTY

The Rock County Medical Society held its regular meeting in the Y. M. C. A. building, Beloit, April 27. Following a dinner at 7 o'clock, Dr. E. S. Blaine, Roentgenologist for Cook County Hospital, Chicago, addressed the society on "The Use of the X-ray Diagnosis from the Standpoint of the General Practitioner." With the aid of stereoptican views, he gave his listeners a fine exposition of the X-ray's value as an aid to diagnosis in general practice.

NEWS ITEMS AND PERSONALS

A city isolation hospital to cost about $50,000 will be built by the City of Superior on a new set of plans which take the place of plans which would have cost the city $100,000.

Doctors Thompson and Edwards of La Crosse have decided to locate in Reedsburg. Dr. Thompson formerly practiced at Reedsburg before entering the service.

The Milwaukee Children's Hospital has been conducting a campaign for $500,000. Ferdinand Schlesinger made the first contribution to the fund by donating $150,000, and Mrs. Emeline Nunnemacher, former president of the hospital, presented it with the ground and building at Seventeenth and Grand Avenue. During the last twenty months, thirty different nationalities have been treated, numbering 1,259 children.

As a result of the standardization plan adopted by the Deaconess Hospital of Green Bay, a meeting was held for the purpose of electing officers to serve on the medical staff which resulted as follows: Dr. J. J. Bellin, chief of staff; Dr. R. C. Buchanan, vice chief of staff; Dr. E. S. McNevins, secretary.

Dr. J. M. Dodd of Ashland has been elected as first vice-president of the Wisconsin State Automobile Association. He has been the most prominent good roads advocate in northern Wisconsin for many years.

Dr. C. H. Boren of Marinette recently underwent an operation for appendicitis from which he is recovering rapidly.

With more than $300,000 already pledged, Appleton has opened a campaign to raise $200,000 more to build a 200 bed Catholic hospital to replace St. Elizabeth's Hospital, a fifty bed institution which is much too small for the city.

Dr. G. H. Fellman, who has offices in the Majestic Building, Milwaukee, has announced that his practice will now be limited to diseases of children.

Dr. Thomas F. Laughlin, an eye, ear, nose and throat specialist, has located in West Allis.

Dr. J. J. Curtin and family left Sturgeon Bay the latter part of April to locate in the central part of the state. Dr. T. M. Rohow of Bessemer, Michigan, has taken over Dr. Curtin's practice.

The nurses' training school of Mt. Sinai Hospital, Milwaukee, to be erected as a result of the financial campaign recently closed, will be one of the most complete in the country. It will also greatly enlarge the capacity of the hospital, adding about eighty beds.

Dr. J. P. Koehler has resigned as deputy health commisioner of Milwaukee, having accepted an appointment as chief of the Milwaukee County Dispensary.

Dr. B. C. Tarnutzer of Beaver Dam has sold his home and practice to Dr. A. W. Hammond of Chicago and will move to Los Angeles.

Doctors Franz Pfister and J. J. Brook of Milwaukee have announced a partnership for the practice of eye, ear, nose and throat work. Doctor Pfister is at present in Europe for the purpose of study.

Clark County is to build a county asylum at Owen which will be the largest in the state outside of those in Milwaukee County and which will be capable of caring for 250 patients.

Dr. Edgar Albers has left Thiensville for Chicago, where he has accepted a position as assistant medical examiner for the Illinois Life Insurance Company.

Dr. L. A. Steffen has been appointed as city physician and health officer of Antigo.

The establishment of public comfort stations in every city and village in Wisconsin, a new municipal function created by the last legislature, is now effective with the issuance of the Wisconsin Public Station Code. This is the first state to make such requirements, the basis for the law being public health.

Dr. W. T. Flatley has been elected as a member of the health board of Kenosha.

Dr. J. R. Longley of Fond du Lac has received a citation from the government for "Exceptionally meritorious and conspicuous service as chief surgeon of the American Expeditionary forces in Russia."

Dr. H. G. Mertens has returned to Bayfield from New York, where he has been taking post-graduate work. He will be connected with the Dodd Clinic of Ashland in the future.

Since May 1, 1920, Doctors M. N. Federspiel, A. C. Rhode, G. E. Morgan and J. J. Berry have conducted their private practices under the name of Federspiel's Dental Polyclinic, 413-422 Wells Building, Milwaukee. The object of this association is to create a more definite standard in the development of scientific dentistry. The Dental Polyclinic will conduct a well equipped X-ray laboratory and photographic department with an expert technician in charge. The grouping of a number of specialists under one head enables such a unit to make better diagnoses of the average case and should promote the establishing of correct findings of abnormalities of the mouth and jaws and the determination of their relation to systemic diseases.

Dr. R. S. Schroeckenstein of Marion has been seriously ill in St. Elizabeth's Hospital, Appleton.

An increase of 19 inmates in state institutions for the insane is shown in the March report of the state board of control over that of March, 1919. However, in county institutions the decrease is marked, being 82 less than a year ago. Institutions for feeble minded showed an increase of 4 during the year, while penal institutions show a decrease of 23.

The fifth and probably the last state cooperative laboratory of hygiene to be established in Wisconsin cities has been authorized at Beloit. The state board of health bears part of the expense and the city the remainder. Other cooperative laboratories are at Oshkosh, Superior, Wausau and Kenosha. The main laboratory is in Madison, in connection with the university, while a branch of the main office is maintained by the state at Rhinelander. The Beloit laboratory will serve that city and the surrounding territory, making diagnoses and analyses of specimens to ascertain the character of disease organisms that may be present. This service is rendered free to physicians, health officers, veterinarians and other citizens. With the location of a laboratory of hygiene at Beloit, the state board of health has, within the last four years, established laboratories in practically every section of Wisconsin. Each laboratory city is contiguous to a wide territory from which all physicians can send specimens with the possibility of having them reach the laboratory early and analyzed within a short time. Good railroad facilities are among the first considerations in the selection of these cities. The rules governing these laboratories adopted by the state board of health limit them to cities where full time local health officers are employed.

The board of directors of the Madison General Hospital Association has decided to establish a medical staff of some twenty physicians in connection with the hospital.

The death rate in Wisconsin for the first three months of 1920 was considerably higher than the rate for any similar period in the last thirteen years, according to reports compiled by the state board of health. The rate was 15.6 per thousand population and was based on total deaths of 10,016. "This excessive mortality," the board explained, "is due almost entirely to the influenza epidemic which appeared early in January and continued in various parts of the state through January, February and March." The actual increase in deaths over a similar period in 1919 was 1,621.

The supreme court at Madison sustained the decision of the lower court sentencing Dr. Till, the so-called plaster specialist of Barron County, to jail for six months. The lower court found Dr. Till guilty of practicing medicine without a license and an appeal was made to the supreme court.

DEATHS.

Dr. E. A. Toby died at his home in River Falls, April 23, at the age of 74 years. He was born in Calais, Vermont, in 1847, and graduated from the University of Vermont in 1874. He practiced for a time in the East, then in St. Thomas, North Dakota, removing to River Falls in 1892 where he has since resided with the exception of a few years spent at Cable, Wisconsin. He was for some years a member of the Pierce County Medical Society but dropped from the membership when he retired from practice about three years ago.

Dr. Jane N. Wilson died April 25, aged 99 years, at her home in Madison. She was born in Vermont in 1821

and came to Madison in 1854. She was the oldest resident of Madison and rendered highly appreciated services to the soldiers during the Civil War.

Mrs. Althea Bardeen, wife of Dr. Charles R. Bardeen, dean of the University, died April 20, 1920, at the infirmary, following an illness of several months. Death was due to cancer.

Dr. T. J. McCrory died at St. Mary's Hospital, Racine, May 5, from injuries sustained in an automobile accident. He was born in Fond du Lac, Wisconsin, in 1878, and graduated from the Northwestern University Medical School in 1905. He practiced medicine at Waukesha for nine months, after which he removed to Racine, where he practiced until the time of his death. He was a member of the Racine County, Wisconsin State and American Medical Associations.

MARRIAGES

Dr. G. H. Stannard, Sheboygan, to Miss Cora Schmidt, Sheboygan, March 31, 1920.

Dr. H. J. Stickle, Wautoma, to Miss Euphemia Snowdon, Arlington, Massachusetts, April 28, 1920.

Dr. Chauncey Beebe, Sparta, to Miss Marguerite Bittner, New York, April 3, 1920.

ASSOCIATION NEWS

The meeting of the Public Health Committee, organized to work for centralization of all state health activities, was held April 20 at Madison for the purpose of discussing child welfare, public health nursing, and organization of said committee.

Dr. W. D. Stovall was elected chairman.

It was stated that Mr. McGregor of the Extension Division was preparing a report which will indicate the work covered by the various health activities of the state.

Also, that a State Community Council has been organized, having a representative from each state department. It was agreed that this committee would act for them in an advisory capacity on public health questions.

The committee endorsed the establishment of a centrally located hospital for the medical and surgical treatment of invalid and crippled children. It was shown that there is a pressing need for such an institution.

Mrs. Morgan announced that 16 health centers have been established, general, and for children.

The stimulation of a statewide activity in weighing and measuring the children was proposed and endorsed.

Favorable action was taken, approving of centralizing the public health nursing under the State Board of Health, the Departments of Child Welfare and Nursing acting for them, in order that the direction and supervision of the nurses's duties might be controlled by that department.

The committee also favored the appointment of an active and interested woman on the county health committee.

Representatives present were: Dr. C. A. Harper, State Health Officer, Dr. W. F. Whyte, president, and L. W. Hutchcraft of the State Board; Dr. W. D. Stovall, State Laboratory; Mrs. Mary P. Morgan and Miss Nellie Van Kooy, Bureau of Child Welfare and Public Health Nursing; Dr. E. V. Brumbaugh, Wisconsin Anti-Tuberculosis Association; Dr. J. Gurney Taylor, State Medical Society; A. B. Cook and Dr. Elizabeth Woods, State Department of Public Instruction; Miss Sylvia Sachtjen, Industrial Commission; Mrs. E. E. Hoyt, Miss Emma Conley, Mrs. Nellie Kedzie Jones, College of Agriculture; Miss Selma Ackerfeldt, Central Division, American Red Cross, and Mrs. H. S. Richards, State Federation of Women's Clubs.

J. Gurney Taylor.

CORRESPONDENCE

Washington, D. C.,
February 18, 1920.

Secretary, Medical Society,
Milwaukee, Wis.

Dear Sir:

We are seeking the name and address of the widow or next of kin of Patrick H. McCauley, Major 17th Wisconsin Infantry, who died at Des Moines, Iowa, some years ago.

We are advised that a granddaughter, Susie Reddy, was a trained nurse in your city and married a doctor some years ago. Please send us the present name and address of Miss Reddy.

The information is needed in respect to a case of financial interest to the heirs.

Thanking you, we are,

Yours very truly,
Pennebaker & Raum.
Attorneys at Law.

THE AWAKENING.

A well-known surgeon was performing an operation on a patient when a fire started at a warehouse across the road, illuminating the whole operating theater. Having finished, the surgeon turned to the nurse and dryly said:

"I say, nurse, I notice the patient is coming to. I think you had better draw the blinds. I don't want him to think the operation hasn't been a success."

A MUSICAL SOLO.

Doctor—"That must have been quite an interesting case you had in there?"

Nurse—"Yes, Mrs. Lorrey just gave birth to a 13-pound boy."

Doctor—"Was it instrumental?"

Nurse—"No, vocal."

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Shell-Shock and Other Neuropsychiatric Problems. By E. E. Southard, Sc. D., M. D., Boston. Monograph No. 3 of the Psychopathic Department of the Boston State Hospital. Boston: W. M. Leonnard. 1919. Cloth, $10.00.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M. D., F. A. C. S. 223 illustrations and 4 colored plates. 3d edition. St. Louis: C. V. Mosby Co. 1920. Cloth, $5.00.

Personal Beauty and Racial Betterment. By Knight Dunlap. 95 pages. St. Louis: C. V. Mosby Co. Cloth, $1.00.

Sex Attraction. By Victor C. Vaughan, Sc. D., M. D., LL. D. 44 pages. St. Louis: C. V. Mosby Co. Paper, $0.50.

Education in War and Peace. By Stewart Paton, M. D. 106 pages. New York: Paul B. Hoeber. 1920. Cloth, $1.50.

Thoughts of a Psychiatrist on the War and After. By Wm. A. White, M. D. 137 pages. New York: Paul B. Hoeber. Cloth, $1.75.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M. D. Second edition. 844 pages. 433 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00.

A Textbook on Physiology. By Russell Burton-Opitz, M. D., Ph. D. 1185 pages. 538 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $7.00.

Pasteur—The History of a Mind. By Emile Declaux. Translated by E. F. Smith and Florence Hughes. 363 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Surgical Shock and the Shockless Operation Through Anoci-Association. By Geo. W. Crile, M. D., and Wm. E. Lower, M. D. Second edition. 272 pages. 75 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Sexual Impotence. By Victor G. Vecki, M. D. Sixth edition. 424 pages. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $3.00.

The Diseases of Infants and Children. By J. P. Crozer Griffith, M. D., Ph. D., Professor of Pediatrics, University of Pennsylvania. Two volumes with 436 illustrations, including twenty plates in colors. Philadelphia and London: W. B. Saunders Co. 1920.

Orthopaedic and Reconstruction Surgery—Industrial and Civilian. By Fred H. Albee, A. M., M. D., Sc. D., F. A. C. S., Lieut. Col. M. C., U. S. A., Professor and Director of Department of Orthopaedic Surgery at New York Postgraduate Medical School and University of Vermont. 804 illustrations. Philadelphia and London: W. B. Saunders Co. Price, $11.00.

Nervous and Mental Diseases. By Archibald Church, M. D., and Frederick Peterson, M. D. Ninth edition. 949 pages. 350 illustrations. Philadelphia and London: W. B. Saunders Co. 1920.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A. M., M. D., F. A. C. S. Tenth edition, revised and enlarged. 1200 pages. Philadelphia and London: W. B. Saunders Co. 1920.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M. D. Fourth edition. 602 pages. Illustrated. Philadelphia and London: W. B. Saunders Co. 1919.

Pathogenic Bacteria and Protozoa. By Jos. McFarland, M. D. Ninth edition. 858 pages. 330 illustrations. Philadelphia and London: W. B. Saunders Co. 1919. Cloth, $4.75.

Diseases of the Nervous System. A textbook of Neurology and Psychiatry. By Smith Ely Jelliffe, M. D., Ph. D., and William A. White, M. D. Third edition, revised, rewritten and enlarged. Illustrated. 1018 pages. Philadelphia: Lea & Febiger. 1919. Cloth, $8.00.

Crime and Criminals. The Jurisprudence of Crime, Medical, Biological and Psychological. By Charles Mercier, M. D., F. R. C. P., F. R. C. S. 290 pages. New York: Henry Holt & Co. 1919. Cloth, $2.50.

Outlines of Psychiatry. By William A. White, M. D. Seventh edition. 345 pages. Washington: Nervous & Mental Disease Publishing Co. 1919. Paper, $3.50.

The Autonomic Functions and the Personality. By Edward J. Kempf, M. D. 155 pages. Washington: Nervous & Mental Disease Publishing Co. 1918. Paper, $2.00.

Inbreeding and Outbreeding: Their Genetic and Sociological Significance. By Edward M. East, Ph. D., and Donald F. Jones, Sc. D. Illustrated. 285 pages. Philadelphia: J. B. Lippincott Co. 1919.

The Narcotic Drug Problem. By Ernest S. Bishop, M. D., F. A. C. P. 165 pages. New York: The MacMillan Co. 1920. Cloth, $1.50.

The Woman of Forty. By Edith B. Lowry, M. D. 202 pages. Chicago: Forbes & Co. 1919. Cloth, $1.25.

Applied Eugenics. By Paul Popenoe, M. D., and Roswell Hill Johnson, M. D. 459 pages. Illustrated. New York: The MacMillan Co.

The Psychology of Conviction. By Joseph Jastrow. 386 pages. Boston: Houghton-Mifflin Co. 1918. Cloth, $2.75.

Habits That Handicap. By Charles B. Towns. 233 pages. New York and London: Funk & Wagnalls Co. 1920.

BOOK REVIEWS

PERSONAL BEAUTY AND RACIAL BETTERMENT. By Knight Dunlap. 95 pages. St. Louis: C. V. Mosby Co. 1920. Cloth, $1.00.

Professor Dunlap, who holds the chair of experimental psychology in Johns Hopkins University, has in this little volume brought out a brief and clear presentation of eugenics. It is intended primarily for physicians, clergymen and psychologists and will be read by them with interest and benefit. The subject is presented in an original and unusual manner.

A Text-book Upon the Pathogenic Bacteria and Protozoa. For students of Medicine and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the University of Pennsylvania. Ninth edition, thoroughly revised. Octavo of 858 pages with 330 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1919. Cloth $4.75 net.

The ninth edition of McFarland's standard text has been carefully revised and brought up-to-date. The arrangement of the subject continues a division into two general parts, the first covering history, biology, infection, immunity, cultures, species, antiseptics, vaccines, the Wasserman reaction, etc. Part two covers the infectious diseases and the specific micro-organisms responsible for them.

The work in every way measures up to the excellence of former editions and is deserving of its well earned popularity.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M. D., Ex-Associate Professor of Medicine, Jefferson Medical College. Fourth edition, thoroughly revised. Octavo of 602 pages. Illustrated. Philadelphia and London: W. B. Saunders Company, 1919.

The new matter in the fourth edition chiefly concerns the lungs and the heart and pays particular attention to gas edema, gas pneumonia, influenzal pneumonia and hilus tuberculosis. The effort syndrome, the functional capacity of the heart, the aviator's heart and sino-auricular block, the clinical realization and physical signs of the cecum mobile are dealt with in detail. Improvements in various technical methods of physical examination have been described. The fourth edition carries with it several new illustrations.

It is divided into five sections covering methods and technique of physical examination, examination of the thorax, of the broncho-pulmonary system, diseases of the broncho-pulmonary system and mediastinum, examination of the cardio-vascular system, diseases of the cardio-vascular system, and examination of the abdomen.

The work is beautifully printed and wonderfully illustrated. It is a practical treatise on diagnosis intended for student and practitioner alike and is recommended for every medical man's bookshelf.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A. M., M. D., F. A. C. S. Tenth edition, revised and enlarged. 1,200 pages. Philadelphia and London: W. B. Saunders Co. 1920.

The tenth edition of this popular dictionary is a new and complete dictionary of the terms used in medicine, surgery, dentistry, pharmacy, chemistry, nursing, biology, etc., with the pronunciation, derivation and definition, together with new and elaborate tables of the arteries, muscles, nerves, veins, bacteria, ptomaines, etc.; weights and measures, eponymics, tables of diseases, operations, signs and symptoms, stains, tests, methods of treatment, etc.

In the new edition, several hundred new terms have been defined and the work has been thoroughly revised throughout. The general plan of the book which has made it so popular has been maintained. It is a concise and convenient word book and the author has sought a middle course between the large unwieldy lexicon and the abridged student's dictionary, avoiding the disadvantages of each. It is almost a necessity on the reading table of anyone who reads medical literature today.

Nervous and Mental Diseases. By Archibald Church, M. D., Professor of Nervous and Mental Diseases in Northwestern University Medical School, Chicago; and Frederick Peterson, M. D., formerly Professor of Psychiatry, Columbia University. Ninth edition, revised. Octavo volume of 949 pages, with 350 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $7.50 net.

This standard text, which has now reached the ninth edition, well merits the popularity it has attained. The authors state that no radical changes have been made in this edition but that, guided by the advice of a large number of medical teachers, the same general presentation has been maintained and certain radical views have not been incorporated as more time and experience has been thought requisite for their unquestioned establishment.

In this edition, the subjects of general paresis and traumatic insanity have been rewritten. The book is a carefully prepared text, written with the needs of the medical student and the general practitioner always in mind. The work is presented in clear, direct fashion and Doctors Church and Peterson are to be congratulated on a text on the subject which is unexcelled.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M. D., F. A. C. S. Third edition. 223 illustrations and 4 colored plates. St. Louis: C. V. Mosby & Co. 1920. Cloth $5.00.

The third edition of Doctor Hirschman's popular work shows few changes in technique and they are merely refinements. A large number of new illustrations have been added to bring these out in more detail. The scope of the volume has been kept within its original limitations, while the field of local anaesthesia continues to broaden. The text is as free from technical details as is possible in a work of this type, which makes it of special value to the general practitioner, qualifying him to diagnose and treat as successfully as he does affections of other organs and localities. The work is beautifully printed and illustrated.

Surgical Shock and the Shockless Operation Through Anoci-Association. By George W. Crile, M. D., Professor of Surgery, School of Medicine, Western Reserve University, Cleveland; and William E. Lower, M. D., Associate Professor of Genito-Urinary Surgery School of Medicine, Western Reserve University, Cleveland. Second Edition of "Anoci-Association" Thoroughly Revised and Rewritten. Octavo of 272 pages with 75 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $5.00 net.

A second edition of "Anoci-Association" has been thoroughly revised and rewritten. The reception af-

forded the first edition, together with the accumulated experience in civilian and military hospitals, has corroborated evidence of the soundness of the fundamental principles of Anoci-Association and of its practical application.

The subject is presented concisely and covers the principles upon which the doctrine is based and their practical application. It is a wonderful work and a landmark in the medical literature of the century.

Sexual Impotence. By Victor G. Vecki, M. D., San Francisco, California. Sixth edition. 12mo of 424 pages. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $3.00 net.

That Dr. Vecki's work has reached a sixth edition is evidence of the reception given it by the medical profession of America. It is a common sense presentation of a subject much neglected by the medical man, and is recommended without hesitation.

Thoughths of a Psychiatrist on the War and After. By Wm. A. White, M. D. 137 pages. New York: Paul B. Hoeber. Cloth, $1.75.

Anything from the pen of Dr. White is welcome to those familiar with his works. In this little volume of 137 pages, he presents the psychological principles underlying the changes taking place in these days of social upheaval. Exceptional examples of mental disorders of adjustment not only in military ranks but in the civilian population as well confront the psychiatrist and it is from this viewpoint that he sets down his "thoughts."

His chapters on the psychological effects and causes of the war and on some tendencies quickened by the war are original and new. The entire work is filled with a philosophy very characteristic of the author.

Education in War and Peace. By Stewart Paton, M. D. 106 pages. New York: Paul B. Hoeber. 1920. Cloth, $1.50.

Closely akin to Dr. White's interesting work reviewed above, is Stewart Paton's, "Education in War and Peace." This little volume is divided into three chapters, "Human Behavior in War and Peace," "War and Education," and "The Psychiatric Clinic and the Community."

During the war, the people developed a quickened interest in cases of socalled "shell-shock." The author shows that peace no less than war produces "shell-shock" and that those who are nervously unfit fill the alms houses, reformatories, courts, hospitals and sanitariums. The need of trained investigators competent to undertake the solution of these momentous problems is shown in this little work.

Sex Attraction. By Victor C. Vaughan, Sc. D., M. D., LL. D. 44 pages. St. Louis: C. V. Mosby Co. Paper, $0.50.

This little work in paper cover is a lecture given at the Michigan State Normal School by Dr. Vaughan in July, 1919. It is an excellent little lecture and is recommended.

Orthopedic and Reconstruction Surgery, Industrial and Civilian. By Fred H. Albee, A. B., M. D., Sc. D., F. A. C. S., Lieut. Col. M. C., U. S. A. Professor and Director of Department of Orthopedic Surgery at the New York Post-Graduate Medical School and at the University of Vermont; Chairman Rehabilitation Commission of State of New Jersey; Member of Advisory Orthopedic Council to the Surgeon General; Chief Surgeon U. S. Army General Hospital No. 3, Colonia, N. Y., etc. With 804 illustrations. Price $11.00. W. B. Saunders Company, Philadelphia and London.

Dr. Albee's new edition of his text on Orthopedic Surgery including Reconstruction Surgery is indeed a great monument to his surgical and literary work in this branch of surgery. It is a book that is at once practicable and useful to the general practitioner, to the Surgeon and to Medical Students. It covers the work in orthopedic surgery very fully without being burdened with unnecessary details. It brings the literature and statistics up to date on etiology, pathology and management and treatment of the diseases of the bones and joints.

A complete and handy bibliography and reference is included at the end of the various chapters. The illustrations both photographic and roentgenographic are very satisfactory and well chosen.

F. B. McM.

A Text-book of Physiology, for Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo volume of 1,185 pages with 538 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $7.50 net.

In the preface to his work, Dr. Burton-Opitz explains that in it is embodied in large part the subject matter of a series of lectures which he has annually delivered to the students of Columbia University. He has endeavored to invade the field of comparative physiology no further than absolutely necessary to form a thorough basis for the physiological problems of special importance to medical men. The work is written with a realization that the medical student is pressed for time and imbued with a definite desire to apply his physiological knowledge in a practical way at the bedside.

He has briefly reviewed the physical and chemical principles which are directly related to medical physiology and has followed the same course pertaining to histology. He has endeavored to be brief by the elimination of everything of minor importance.

The work begins with a consideration of living substances and the general phenomena of life, and then takes up the physiology of muscle and nerve, the blood and lymph, the mechanics of the circulation, respiration, voice and speech, the central nervous system, the sense organs, sight, secretions, metabolism and reproduction.

Though the work takes up nearly 1,200 pages, when the vast scope of the subject is considered, it is realized that the author has succeeded in eliminating non-essentials and in making as brief and clear as possible his presentation of the subjects necessarily covered in a student's textbook. The work is recommended.

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Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M. D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, M. D., Assistant Professor of Medicine in the University of Pennsylvania, with a chapter on the Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph. D., M. D., Assistant Professor of Research Medicine in the University of Pennsylvania. Second edition, thoroughly revised. Octavo volume of 844 pages with 433 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $8.00 net.

The exhaustion of the first edition of this excellent work by Norris and Landis is evidence that it has supplied a distinct need. The second edition includes descriptions of several conditions previously omitted, such as, spiro-chetal bronchitis, influenza, streptococcus empyema, chronic inflammatory conditions of uncertain etiology, calcification of the lungs, pneumo-pericardium, etc. In addition, the original material has been recast in part or completely so.

The authors have endeavored, as in their former volume, to teach as much as possible by means of illustrations. Of these, there are photographs of frozen sections of the cadaver. The photographic reproductions throughout are unusually well done and nowhere have we seen anything like them. This is a work one can truthfully say should without exception be in the library of every practitioner of medicine.

Shell-Shock and Neuro-Psychiatry. By E. E. Southard, Sc. D., M. D., with a bibliography by Norman Fenton, S. B. A. M., and an introduction by Chas. K. Mills, M. D., LL. D. Monograph No. 3 of the Psychopathic Department, Boston State Hospital. Boston: W. M. Leonnard. Cloth, $10.00.

This is one of the last works of Dr. Southard of Boston, whose tragic death from pneumonia only a few months ago robbed his profession of one of its brightest lights. Dr. Southard has left us a work on war neurology not to be found elsewhere. It is a study of 589 cases, and case reporting and clinical teaching is here seen at its best.

The book is in five general divisions: Section A—Psychoses Incident to the War; Section B—Shell-Shock—Its Nature and Causes; Section C—Shell-Shock—Diagnosis; Section D—Shell-Shock—Treatment and Results, and Section E—Epicrisis.

This last work of Dr. Southard's is a monument to his memory. While primarily of a military nature, it is of equal importance to civil medicine, and the results drawn from these case reports are just as applicable to every-day life as they are to the days in which they were written.

The Medical Clinics of North America, March, 1920. Vol. III, No. 5. Published bi-monthly by the W. B. Saunders Co.: Philadelphia and London. Philadelphia number. Contributors: E. J. Beardsley, J. B. Deaver, J. C. Drane, C. B. Farr, E. H. Funk, E. H. Goodman, A. H. Hopkins, H. R. M. Landis, E. B. Vincent Lynn, T. McCrae, H. K. Mohler, J. H. Musser, G. W. Norris, O. H. Perry Pepper, M. E. Rehfuss, D. Reismann, J. Sailer and Alfred Stengel.

Textbook of Ophthalmology. By Professor Paul Roemer, Director of the eye clinic in the University of Greifswald. Third, remodelled edition. 496 pages with 297 illustrations and 32 colored plates. Urban and Schwarzenberg. Berlin and Wien. 1919.

Roemer's well known book has been so favorably received that within eight years, three editions became necessary. Differing from the general rule pursued in textbooks that each succeeding edition shows an increase in volume over the former, this one follows the opposite course by decreasing from 1,028 to 828 pages, and now to 496 pages. By this condensation, the new edition has by no means lost in value but greatly gained in practical usefulness.

The work excels in clear dispositon, very good concise style which makes it easily readable, and by the great abundance of splendid illustrations. It does not simply enumerate the facts which constitute the regular subject matter of ophthalmology but by entering into discussions of scientific investigations, it stimulates the interest of the reader and calls his attention to problems still to be solved.

The discourses on the physiology and pathology of the pupil, the relation of the fifth nerve to the eye, the ocular palsies and their diagnostic problems, the eye symptoms in a series of diseases of the brain and spinal cord, etc., are excellent. There is also a good chapter on simulation, with a description of new methods of its exposure. The external appearance is very nice and the use of different types greatly aids orientation.

C. Z.

The Diseases of Infants and Children. By J. P. Crozer Griffith, M. D., Ph. D., Professor of Pediatrics, University of Pennsylvania. Two volumes with 436 illustrations, including twenty plates in colors. W. B. Saunders Company, Philadelphia and London, 1920.

A very comprehensive review of the medical and pediatric literature is contained in the two volumes recently published. It is also well illustrated from both the author's cases and other instructive productions. There is included much of the author's wide and practical suggestions, combined with an abstraction from text books and foreign and domestic pediatric journal literature. Ready foot note reference to this is made at the bottom of the page. The percentage feeding is elaborated to a great extent, but one is disappointed to the little space allotted to Finkelstein's and Czerny's methods. It is a book well worth the physician and student having on his shelf for a ready reference. J. G. T.

Rats cost every person in the United States one-half of one cent a day, says the United States Public Health Service. Write to the Surgeon General, Rupert Blue, Washington, D. C., for an instructive bulletin on how to get rid of them.

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ORIGINAL ARTICLES

TREATMENT OF GUN-SHOT FRACTURES IN BASE HOSPITAL 22 WHILE ON DUTY IN FRANCE JUNE, 1918, TO JANUARY, 1919.*

BY PHILIP ROGERS, M. D.,
MILWAUKEE.

It is not my intention to give you a detailed and technical description of methods of treatment employed by us in the care of gun-shot fractures in France, but rather a brief and sketchy outline of the conditions under which we worked, the problems that confronted us and how we tried to meet and overcome them. And let me say right here that, in my opinion, our experience there developed nothing whatever new or brilliant in the surgical line, but simply served to confirm us in our faith in the old surgical fundamentals.

Base Hospital 22 was located at Beau Desert, near Bordeaux, some 300 miles behind the fighting lines, where a great hospital center, intended to comprise twenty complete units, was in process of construction when we arrived in June, 1918. Although building went on rapidly and continuously, however, only two units, Nos. 22 and 114, were in operation until after the Armistice was signed and they began receiving patients during the second battle of the Marne, about the middle of July. The center was well planned and the units well arranged for receiving and caring for the sick and wounded, although the wards (accommodating fifty patients each) were but flimsy frame structures, roofed with tar paper and lined with beaver-board, and scarcely elevated above the surrounding sea of mud. An American-built railroad brought the wounded directly to our doors in well equipped, solid, vestibuled trains, each train carrying a corps of doctors and nurses. Each coach was furnished with thirty comfortable bunks. An interval of from two days to two weeks elapsed between the receipt of wounds and arrival at Base Hospital 22, depending upon whether the men were sent direct from the evacuation hospitals close behind the firing line, or passed through other hospitals on their way to us. By some mysterious dispensation of the powers above, the convoys, as the trains of the wounded were called, nearly always arrived after dark, so that the surgeons were frequently kept up a good share of the night after having put in a strenuous day in their wards. The wounded were conveyed by stretchers from the train to the receiving ward, where they were classified according to the nature of their injuries and tagged for distribution to the appropriate wards. From here those in need of immediate attention were taken to the operating room, where their dressings were changed and then they were put to bed and made comfortable as quickly as possible in order that they might get much needed rest after their long journey.

Each man brought with him his case record, giving more or less in detail an account of everything that had happened to him up to that time since the receipt of his wound. Every surgeon through whose hands he had passed added his bit to the story, and, while the writing was commonly blurred, confused and hard to make out, due to the terrible pressure under which they were working up front, it was really remarkable how complete the record was when finally unravelled. Previous operations, urine analysis, blood counts, bacterial findings, X-ray reports and even X-ray films were commonly included. As rapidly as possible thereafter these records were studied, the cases themselves thoroughly gone over and new X-rays made to determine the presence of remaining foreign bodies and the position of bone fragments.

In spite of the small caliber of machine-gun bullets, their penetrating power and the vast showers of them that were sprayed upon our troops, we saw very few of the small perforating bone injuries said to be caused by them. At certain ranges these bullets tumble, and on striking bone while tumbling they act just like shell frag-

*Read before the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

ments and cause shattering. Nearly all our fractures were caused by shell fragments and practically 100% of shell injuries were infected, this due to the fact that the missiles were more or less bulky, were jagged, causing laceration of tissues and splintering of bone, and carried into the body bits of clothing, dirt and equipment, these latter always germ laden.

The treatment of these cases was carried out according to the well established principles governing the care of infected fractures, namely:

(a) Removal of foreign bodies and bone fragments;
(b) Establishment of thorough drainage and irrigation;
(c) As careful coaptation and alignment of bone-ends as possible;
(d) Extension for maintenance of alignment and relief of pain;
(e) Suspension (chiefly of leg and thigh fractures) to promote comfort and drainage and to facilitate dressings and nursing care;
(f) Nutritional, tonic, and psychic treatment;
(g) Amputation when unavoidable.

In the removal of foreign bodies and bone fragments their accurate localization by the means of X-ray was of incalculable assistance. It might seem at first thought that, given an infected discharging tract with a foreign body at the bottom, it would be a simple matter to follow down the sinus with finger or forceps, locate and pull out the object, but such was seldom the case, and it was frequently necessary to cut in through healthy tissue, even at the risk of starting a new track of infection. Foreign bodies were often removed under the fluoroscopic screen, the approximation and application of the forceps being accomplished with the object actually in sight. Of course, great care had to be exercised in doing this, and the proximity of large vessels which might be cut or lacerated unwittingly while working in the dark, constantly borne in mind.

As I said before, practically all our fractures came to us already infected, some of them bathed in pus, and in some cases with the patient so septic that it seemed as though amputation offered the only chance to save the man's life, yet after the removal of foreign bodies and bone fragments, cleaning out bits of cloth, dead tissues and other debris, and providing wide open ample drainage and continuous irrigation, most of them cleaned up eventually. The irrigation was supplied through numerous Dakin tubes so placed as to try to reach all parts of the infected field, and Dakin's solution was the standard irrigating fluid. This was either allowed to drip continuously through a pipe line leading from a reservoir, or was injected into the tubes by the nurse at stated intervals. There is considerable difference of opinion among surgeons of the A. E. F. as to the superiority of the Dakin solution over other irrigating fluids in the cleaning up of infections. Some are enthusiastic about it and ascribe almost magical properties to it, while others will tell you that it has no special value over boracic acid solution or any other irrigating antiseptic or even plain sterile water, that none of them penetrate *into* the infected tissues and that all that any of them can accomplish is to continuously bathe the wound surfaces and keep the secretions washed away.

An interesting article on this subject by J. M. Neff appeared in Surgery, Gynaecology and Obstetrics about a year ago. After a year's experience in a British hospital near the front, where all cases in one ward were Dakinized and in another irrigated with other fluids or merely drained and treated with moist dressings, he came to the conclusion that the only special advantage that Dakin's possessed was as a deodorant.

Foreign bodies having been removed and drainage and irrigation provided for, alignment and coaptation of the bone ends and immobilization of the limb were usually secured in splints, those most commonly used being the Thomas Traction splints, Cabot posterior wire splint and Hodgen suspension splint for lower extremities, and Thomas and Jones humerus traction splint for the upper. Foot drop was combatted by a strip of adhesive plaster pasted to the sole of the foot, a long end projecting above the toes and fastened to the bed cradle covering the leg, and wrist drop by the use of the Jones "cock-up" or "crab" wrist-splint, which kept the hand in a state of dorsal flexion.

These were the splints in which the cases usually came to us, their simplicity and ease of application being such that they could be and were commonly applied even by stretcher bearers right on the battlefield, and their adaptability made them easily convertible into a permanent appliance. Buck's extension was usually employed, and traction secured either by fastening the folded ends

of the adhesive strips to the end of the splint and twisting them with a nail or by means of the weight and pulley. During transportation, of course, the nail twist was invariably used. The quick detachable muslin strips which form the hammock-bed in which the limb reposes were fastened to the side bars of the splints with metal clips and the removal of one or more of these gave easy access to wounds on the underside of the limb, while suspension of the entire limb from the Balkan frame, with which all the beds in the fracture wards were provided, made dressings easy to change with the minimum of discomfort to the patient. The Balkan frame, by the way, is a really wonderful contrivance in that it permits of the putting up of a fractured limb at any desired angle in adduction, abduction, flexion, extension or rotation, or any combination of these positions with easy application of traction and counter-traction, and in the case of patients whose bodies and arms are uninjured, furnishing a trapeze by means of which they can readily change their own position and obtain exercise, thus aiding in the prevention of bed-sores, facilitating the use of the bed-pan, and tending to keep up muscular tone. Of course there were many cases of multiple injury involving different parts of the body—comparatively few in fact, had but one wound, and one of my patients, a doctor, had 28—and some of these taxed to the utmost the ingenuity of the ward surgeon in his endeavor to put them up in such a way as to secure proper position, traction, immobilization, and accessibility for dressings,—which of course had to be changed every day and sometimes more often—and at the same time conserve the highest possible degree of comfort for the patient, but we generally succeeded somehow or other. Of course, also, there were no operations for wiring, plating, pegging or banding the bones in these cases for the reason that, as before stated, they were all infected and such procedures were out of the question.

It will be noted that I have said nothing about the use of plaster casts in the treatment of these cases. While in a few suitable cases plaster was employed, it had no general use for the reason that wounds were usually multiple and large, and the discharges so abundant as to require large dressings for which casts are ill adapted. Occasionally when a patient was ready to be evacuated his wounds would have closed down to such a degree that a generously fenestrated cast would fill the bill nicely and then it furnished the best possible splint for transportation.

Nutritional and tonic treatment were supplied by our well stocked and well managed cuisine and dispensaries, and a man's appetite furnished a pretty reliable index of his progress toward recovery. As his sepsis cleared up he became simply voracious. Outside of the harvest fields I have never seen such stomach capacities as were possessed by those convalescent doughboys. Psychic treatment was furnished partly by the surgeons and nurses in the way of cheer and encouragement, partly by music and picture shows to help pass the time, but chiefly by the men themselves who were the most light-hearted and hilarious fellows on the soil of France. I had heard this statement made before we went across and took it with a large amount of salt, but I soon found it to be no exaggeration. The wards were frequently in a perfect gale of merriment.

In a few cases only, amputation had to be resorted to where tissue and bone lacerations were very extensive and where the system was at such a low ebb of vitality that it could not cope with the infection. I do not think this occurred more than five or six times in all our experience. Certainly the number was under a dozen. The rebound toward recovery of health after such amputations was marvelous to behold. One of the last operations I performed before we were relieved from duty was a high thigh amputation on a Bowery boy from New York City who had been sprayed with shrapnel fragments from his toes to his groin. The patella was shattered and the knee joint badly infected and numerous sinuses riddled the thigh and leg. He was subjected to several conservative operations, but all to no purpose; his general condition as well as his leg went from bad to worse and he suffered intensely. At last when it looked doubtful if he would survive, it was decided to sacrifice the leg. It was removed one morning, and that evening the boy ate the heartiest meal he had had in weeks and declared he felt bully, and in a very short time he was ready for the journey home.

While our work much of the time during the drives was very heavy—for we were always short-handed and carried several times our maximum capacity of patients, and hours were long and sleep much disturbed—it was, nevertheless, in most respects very enjoyable. It was a positive pleasure to see the way the fellows responded to

good care, both in their gratitude and in the rapid progress they made. But in one respect it was very unsatisfactory, for just as soon as a case was deemed able to stand the journey, and his dressings were not too complicated, he was evacuated to the United States to complete his convalescence in other hands, and we were not permitted to see the final results.

MY IMPRESSIONS OF THE MEDICAL DEPARTMENT OF THE GERMAN ARMY.*

BY DIRK BRUINS, M. D.,
MILWAUKEE.

Shortly after my return to Wisconsin Dr. Lemon asked me to speak at this meeting on the medical department of the Germans and when I agreed to do so I thought that it would be easy to find considerable material of use to me on the subject. Instead of that, however, I find that I am obliged to give only the things that I have found out by personal experience. To those who in the future wish to learn things about the Germans I would suggest that they get their experiences out of a book for the personal contact method is not a pleasant one and the opinion that they get of the Germans will be much better if they get it out of a book than if they get it through personal acquaintance.

At the time of my capture I was wounded. This gave me much too good an opportunity to study what the German method was like. Instead of having any first aid men near the front with a station near by to get the wounded in promptly the nearest station to the front was five kilometers from where we found their front line. At this point, which was the battalion or regimental headquarters, there was one young surgeon. Just to show the difference in the two systems let us see what would happen to the wounded German soldier who might be taken prisoner. He would receive first aid from the battalion surgeon or medical department men who would be with or near the front line; then taken to the aid station which would not be three kilometers from the front line and from there he would go back in a motor ambulance to the ambulance dressing station and to the field hospital. On the 4th of August I had one dressing station four kilometers from the German front and another within five kilometers. From these it was about ten kilometers back to the field hospital. With the roads clear the ambulances could easily make this run from the dressing station to the hospital in twenty minutes. So the wounded prisoner would normally get his first aid immediately on being picked up, would be put in an ambulance not more than three kilometers behind our lines and within four hours from the time the medical men got hold of him he would be in a hospital. During this four hours he would have been seen by the battalion surgeon and by the surgeon who was in charge of the dressing station. If necessary he would be given hot drinks and food at the dressing station. This rapid evacuation of the wounded did not occur alone in the thirty-second division but was the policy of the French, English and Americans as a whole. By sending back the wounded as rapidly as possible the mortality rate was lowered and in those who came to the operating table within ten hours of the time of being wounded the percentage of infection was lower. I do not know why the Germans did not adopt the same method but know it was not used by them.

The first attention that was paid to my wounds by the Germans was at the regimental station five kilometers back of their line. At this point was a cave or dug-out in the hillside with a Red Cross flag on its entrance. There was one physician there. Previous to this time we had been allowed to lie in a building of a town that was being shelled, for two or three hours. Then we were marched back to the dugout. A number of unwounded soldiers used this dugout to sleep in, which is a violation of the rules governing the use of the Red Cross flag. I saw one of them chase cooties for a little while and wished that he at least would stay outside. While here I heard the order given two men to go up and bring in a wounded man. There was one wounded man in this dugout when I was put in it and he was taken out at the same time that I was. We were moved back to the hospital at about 9 the next morning, about eighteen hours after being wounded.

This hospital was in another series of caves or dugouts in a small town. I was carried from the horse drawn ambulance fully forty rods on a stretcher. The ambulance was easy riding and would carry four recumbent patients. We would never have been able to get our wounded back without better ambulance service than that. This may explain why so many of the German wound-

*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 2, 1919.

ed were captured though some of these were apparently purposely left behind. One of these was found in Chamery when we moved into the town. He had had a gunshot wound of the belly four days before we came into the town and died before we could move him into our dressing station. We found another in the next town who had been blinded by gas. This man told us that he had been told to stay where he was till the wagon came, but the wagon never got back.

On arriving at the hospital in the dugout I was put in a cave on a stretcher and a wet blanket thrown over me. A German gave me a little hay for a pillow. I had had no food or drink since capture and asked for something to drink and got it though the first surgeon had ordered that I get nothing as he suspected intestinal injury. During the day my wounds were looked at by the surgeons. There seemed to be two of these in the hospital and the enlisted personnel was probably not over twenty. There was also a chaplain at this point. There was an acetylene plant that was used by the surgeons to light their operating table. This plant seemed to be a part of their equipment.

On the morning of the third day I was carried back up the hill to the ambulance which had stopped in an ammunition dump to wait for its load. The blanket which had dried out from the heat of my body was taken off and another which was also wet was put over me. This ambulance was one of their motor ambulances. There were no sitting cases transported at the time that I was in it and they seemed to be built somewhat as ours were but with more complicated arrangements. They seemed to have much difficulty with their motors and did not seem to get going faster than in second speed. It had solid rubber tires and I do not think that it ran faster than eight miles an hour. One that I was in later had engine trouble and the patients had to be transferred to another ambulance. All three of the motor ambulances that I was in travelled just a little faster than the horse drawn wagon trains beside them on the road. Having the solid rubber tires they were not easy riding.

The second hospital at which I arrived was somewhere in the neighborhood of Craonne hill. The tent in which I was placed was one of the captured French, Bessoneau type. In this were about 36 to 40 beds of the iron single hospital bed type. These had on them a straw tick and a single blanket. Here I was able to get my clothes off. If I had known as much then as I did later I would not have taken off as much as I did. When I left this hospital I found that my shoes had been stolen. All of the other patients that were in this tent were Germans and there was much howling and groaning with pain. Several operations were performed daily in another tent and from the conversation I had with the feld webel they were busy with operations till late at night. There were several changes daily in the patients. Three died to my knowledge while I remained here and one more was about ready to go. Those who were permanently disabled or unable to fight again for some months were started towards Germany but those who would recover in a few weeks were sent into Belgium. I was put to sleep with ethyl chloride here and an abscess opened up and the bullet removed. While here I saw something that did not give me any better idea of the Germans. The man on the bed next mine was a young German of 19 who had an amputation of the middle of the right thigh. He ran a temperature of about 101 and did much vomiting. It was seldom that he kept down anything in the nature of food. The surgeon came to his bed and pulled down the blanket. He turned and addressed the other patients as follows: "Dieser man hat sien band abgezogen. Es wird nicht wieder aufgemacht. Wir haben hier kein kindergarten." Throwing back the blanket he went on.

At this place there were two nurses for the forty men. These were nearly all severely wounded patients. The two who were acting as nurses were infantrymen who had had no special training but they told me that they were getting their training here so that they might become Red Cross men at the front. Sanitation did not worry them much. I was in the end bed in the tent and I could hear them throw out the urine on the ground. I do not know what became of the feces. When a man died in a bed he was carried out on a stretcher. His former bed was gotten ready for the next occupant by smoothing out the wrinkles and straightening out the blanket.

On the morning of the third day I was sent from this hospital to the large hospital in the old French barracks at Sissonne. Here by mistake I was put in the same ward as the German officers. This I made no objection to particularly as it let me get a clean shirt. As soon as the officer in charge came around though, I was sent over to the place where they had the other wounded pris-

oners. At first there were French, Italians and Americans in the same room and these were supposed to be cared for by the Germans. I found that I could be of some service here as chief interpreter and did what I could to help these wounded make their wants known. At this point there were female nurses though we had no care from them. Most of the care that we got was from a captured Italian tailor who was very good to me. On the second day here the medical man in charge of the building put me in a room where this Italian was the only other occupant. He mended my clothes for me which were considerably torn to pieces by bullets. The only thing that I could give him was some of the German bread which I was not yet hungry enough to eat. I tried to give him some money and he refused it. I had given my cigarettes to the first American who had been put in the other room with me. I got hold of a piece of a New Testament here which one of the Italians was keeping as his store of toilet paper. Any reading matter in English looked good to me. I had had no need of toilet paper so far. It was on the eighth day after being wounded that I did finally get this matter of defaecation through. Then it was because I had requested cathartics for the two preceding days. That was a measure of how carelessly they looked after their wounded prisoners. So far as I could see no records accompanied prisoners or patients to show what had been done to them previously.

This hospital was as near as I could see arranged somewhat like our larger base hospitals. There were twenty or more large two story barracks. Each floor would accommodate one hundred and fifty to two hundred beds. There was one physician and two orderlies for the floor who looked after the condition of the patients. My wounds were dressed daily by this doctor. There were no operations done in the wards here to my knowledge. I never saw the major in charge at any other time than when he ordered me taken to the barrack where the prisoners were, so I cannot say how often he made his rounds. On the fourth day I was moved from here.

My idea of German efficiency received another blow. At 3 in the afternoon we were loaded into a freight train. The cars had small timbers laid crosswise of the car set on small coil springs. The stretchers were placed on these timbers. We were taken by this train to Laon, a distance of between twelve and fifteen miles. We arrived at 10 o'clock at night. Twelve miles in seven hours is not too rapid.

At Laon I was put in the officers' ward and got better care. The food was also better and I could hear what they were discussing in officers' circles. I learned afterward that they did not know much more about what was going on in Germany than some of the rest of us. One was telling how they had plenty of white bread there. If they did I never saw it. Officers were being sent home for a variety of reasons. The severely wounded were going back. One was a tabetic. One had had a leg amputated below the knee. Some seemed to have little the trouble. One surgeon seemed to have complete charge and no other assistants.

On the 16th of August the hospital train came in and was loaded up. This had about forty coaches which seemed to be the same. There were beds for eight patients in each coach and a small space in the middle used by the orderly. There was one surgeon and two nurses beside these orderlies. The surgeon had one wooden leg but in spite of that seemed to be efficient. He examined each case and passed on each as to whether it was a transportable case or not. Because of this it took several hours to load and get the train under way. No German ever seemed to take the word or record of any other German as the truth. He always looked at his cases himself. On the morning of the third day I was unloaded at the station of Mainz. Boys of about 16 were used for this. After remaining in the station about an hour an ambulance took me to the hospital.

The hospital was a city affair apparently and was located on the bank of the Rhine. There were several buildings in the group all enclosed by an iron fence. On the third floor of one of these was the officers' quarters. Here there were French, English, Italian, Russian, and when I had arrived, one American officer. There was in charge of this hospital one surgeon and his assistant who also had two other hospitals to look after. There was also an externe who made his rounds with a sword about four feet long. All of the cases that I saw were pus cases. Many of these seemed to be recovering in spite of their severe injuries. One was an English lieutenant colonel who had been hit in March, the bullet entering the back between the ilium and the spine. He said the X-ray showed it to be about the level of the fourth rib near the trachea now. He had had a big abscess develop in the back, but aside from the opening of the abscess

had had no operation. In spite of the bullet having gone completely through his liver he was recovering. The rest of us were glad this man was getting along so well for he had packages of food coming from England which he very generously shared. One English captain who had been captured in March was suffering from a slowly ascending paralysis. They had made a diagnosis of syphilis on him but had done no Wasserman or spinal puncture. Only the work that was absolutely unavoidable was done. There were beds for about seventy-five patients on this floor and the care we got was from one middleaged German orderly. He was helped by patients who were partly recovered. He did not serve our food but he did such dressings as were done on the floor. The broken legs did not have an easy time of it. They were put on a stretcher and had to be carried down the two flights of stairs to the dressing room. All the dressings done by the surgeons were done in the operating room.

At the prison camps I was in there was a physician who came out and looked after such as came to him for attention. It seemed that we had a rather inferior one at the camp at Villingen. It was fortunate that there was little sickness there among the prisoners. Infections were rather frequent, probably owing to the lowered resistance of the prisoners. All infections that required opening the physician sent to the hospital. One infection which had travelled from the end of the thumb into the wrist he would not send to the hospital till I insisted that he do so. He thought that he could reduce it all with hot applications.

The material they had to work with was not very much. They used a minimum of gauze. One of our surgeons who was kept behind the lines to care for prisoners for three months said that the orderly once brought him a package of gauze which contained one square yard. The surgeon asked how many dressings he was supposed to get out of this and was told a thousand. Their practice was to cut a piece of gauze the exact size of the wound and put the wood fibre over that. The wood fibre was not at all comfortable as a dressing. It became pulpy when it got wet and hard when it got dry. Paper bandages were the rule. I saw plaster of paris bandages made up with the paper substitute. There was an ersatz or substitute for nearly everything. Aspirin made and patented in Gemany had an ersatz for it.

One thing I tried to get information on later and was not able to do so. I saw very few Germans with legs or arms amputated. I believe that they let many of these die as they were doing in the case of the man whom the surgeon refused to redress when in his delirium he got his dressing off. In France there were many of these to be seen and in Germany very few. They may have thought that these maimed men were better dead.

These were the main things that I found from my contact with the Germans. 1. They kept their medical men much further to the rear. 2. They had few surgeons and medical department enlisted men. 3. Their equipment was far below ours. 4. Their evacuation of the wounded was very slow. 5. Their hospitals did not compare with ours. 6. They seemed to have no sanitation in the field. 7. They seemed to let men die who would not be self-supporting citizens in the future.

ADDRESS OF THE CHAIRMAN EYE, EAR, NOSE AND THROAT SECTION.

BY FRANZ PFISTER, M. D.,
MILWAUKEE.

The program is a military program. The committee in charge of this whole meeting thought that it would be a duty on our part to make this meeting a memorial meeting in honor of those who have given their services to their country, either directly or indirectly, and at the same time have them make permanent reports of their experiences, in order that we may have the benefit from them in the future. Such a specific program is bound to be more or less one-sided. At least, it has been said, since we have formulated this program, that the program will hardly be interesting enough for anybody to enjoy. It may be on account of this, and on account of the Tri-State meeting that the attendance is smaller than usually. At any rate, we do not feel sorry for arranging this program. We think we have done the proper thing. As we glance at our special program we see that the Eye, Nose and Throat has been covered fairly well. There have not been as many revolutionary changes in our field as in some of the other work, particularly the surgical work. Nevertheless there are things that have been developed in this war that are of interest to us, and they are the things that must be brought out for the benefit of all of us.

I am very sorry that in our program we were not able to get one phase, the phase of the physiology and pathology of the labyrinth as it has been

developed in the Aviation Departments in the different countries. Maybe next year somebody will be able to give us a conclusive and exhaustive report in regard to the new development, new discoveries, and new tests of the labyrinth. If the war was ever so terrible in some fields of surgery and medicine, it has been the source of evolution and development also. We knew very little of the labyrinth until a few years ago. What has been commenced has been tried out in the ordinary pathological fields, as a rule, but this labyrinth work has been fundamental work in the examination of those that were to be enrolled in the aviation department. I am sure my successor, and the secretary of the program committee, at our next meeting, will have somebody to tell us all about this.

In conclusion I would recommend a few things. One would be that the incoming secretary try to collect the names of all those in the state that are in the eye, ear, nose and throat work exclusively, and also those that are interested to a greater or less extent, so that we have a directory of the men we want to draw on. In working out this program today we did not know who, of the eye, ear, nose and throat men throughout the state, had been in service. It was difficult to get that information. I think it would be one of the added duties of the secretary in the future to try and keep track of the eye, ear, nose and throat men in the state.

A second recommendation would be that a part of our meeting here be given up to clinical work. We could finish the program we have for tomorrow today, and have a clinic tomorrow. You may think we should have done that, but we were not empowered to do so. I think by formal resolution it ought to be made the duty of the incoming officers to provide for a division of the program by papers, and one by actual clinical work.

I appeal to those of you who are interested in the ear and nose to join the Wisconsin Otological Society, of which Dr. Stanley is secretary. The meetings so far have been held in Milwaukee once a month and they are very interesting. They are frequently clinical as well as otherwise.

Doctor (to patient)—"You had a pretty close call. It's only your strong constitution that pulled you through."

Patient—"Well, doctor, remember that when you make out your bill."

NOTES ON WAR INJURIES.*

BY T. J. SNODGRASS, M. D.,
JANESVILLE.

When orders were received to make ready for a thousand battle casualties there was nothing for us to work with except unfinished barracks and some prison beds. Every effort was made to get supplies; men were sent out all over France to buy surgical supplies; carpenters worked night and day making shock beds, operating tables, Balken frames, dressing tables, and the multitude of things that are necessary in the care of the wounded. The first group of cases was treated with a small stock of Dichloramine-T which had been carried from the United States. Later, the engineers gave us the use of their chlorine tank and Dakin solution was made from the water saturated with chlorine gas. No X-ray was available at this time, so it was necessary to treat fractures, remove foreign bodies, and do the necessary operations without the valuable aid of the Roentgen ray.

During this early period of work, we were acting as an overflow evacuation hospital; the less severely wounded were brought directly to us from the first aid stations.

The same team of surgeons and nurses cared for the men from the time they were received into the hospital until they were discharged to a convalescent camp, and it was at this period of work that the highest percentage of secondary closures was successful.

At a later period our hospital functioned as a base hospital alone. Our staff was cut down and our capacity greatly increased. Patients came back after the primary operations had been done. Dressings were turned over to ward surgeons and ward nurses who were already overloaded with the general care of the men. We were constantly given more consultants and less help, until working conditions became very difficult. With the congestion and overcrowding came the streptococcus haemolyticus, which was the cause of so many failures. Dr. Crile said that an investigation during the war showed that a large percentage of the men were carriers of this virulent form of streptococcus. With these conditions it became more and more difficult to obtain the results hoped for, and which were obtained earlier in the work.

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*Read before the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

Wounds came back to us packed with plain gauze, vaseline gauze, gauze wet with Dakin solution, or with Dakin tubes in place. Wounds with Dakin tubes in place but which had not been properly irrigated were generally in bad shape. Those packed with gauze or gauze wet with Dakin solution did nicely, but the first dressing was very painful because of the adherence of the gauze to the wound, while those packed with vaseline gauze were possibly not so clean, but much more easily dressed.

After the first dressings an attempt was made to sterilize the wounds by means of various antiseptics. It was necessary to take smears of the wound secretions, and after the microbic chart showed less than one bacterium per field for three successive days, the wound was considered ready to close. Later, cultures were used to check up on the presence of the gas bacillus or the streptococcus haemolyticus. The clinical appearance of the wound was always of great value and was relied upon to a large extent. The antiseptics most commonly used were Dichloramine-T, which is convenient and satisfactory in the case of surface wounds but somewhat irritating to tissues, and Dakin solution which was most generally used, and when properly used, gave the best results. Good results were also obtained by using starch iodide after the method of Lumiere. This is a simple, harmless, and valuable antiseptic. The methods just mentioned were used in the preinflammatory stage or in the chronic suppurative stage. During the acute inflammatory stage with cellulitis and lymphangitis present, these surface antiseptics were of little value. Hot packs, hot water baths, and the old Ochsner dressing were indicated until this stage had subsided.

Eighty per cent of the closures were successful. Failures were found to be due to inadequate primary debridement, the presence of foreign bodies, and dead bone fragments, bad dressing technique, and oftentimes too much operating at the time of closure. Of the group of failures, the presence of foreign bodies and small bone fragments were the most common causes, and it would have been a good thing if the surgeons who were doing the primary operations had had more opportunity to watch the end results in many of their cases.

A few cases of gas gangrene were met with, some requiring amputations, others the removal of the group of muscles affected. Tight bandaging, ligation or destruction of a main vessel, or insufficient debridement were the most common causes. Only one case of tetanus developed and this was a late case which had already been given several prophylactic doses of serum. He recovered after administering large doses of antitetanic serum intra-muscularly, intravenously, and intraspinously.

Wounds complicated by fractures were much more difficult to deal with than wounds of the soft tissues, for in many cases osteomyelitus or long periods of suppuration ensued. Fractures were practically all compound and comminuted. In some cases the bones would simply be broken across. In others there would be the explosive type of fracture in which it seemed that the bullet had struck the bone in the center and broken the fragments in all directions in more or less orderly arrangement. In many cases the displacement was severe, and in others from three to five inches of bone would be completely removed.

Fractures were immobilized for the most part by traction and suspension, using the Thomas or the Hodgins splint and the Balkan frame. The use of this apparatus greatly facilitated the dressing of the wounds. Fractures of the extremities, where traction was necessary, came back with a Thomas splint applied, obtaining traction by means of the tourniquet. It was a very simple matter to adjust the splint, remove the tourniquet and apply a weight in its place, thus using the splint as a suspension apparatus only. The Steinman pin was used in a few cases of fracture of the femur, because the ice tong type of apparatus which proved so valuable in many hospitals was not available to us. There was little difficulty experienced in the use of the Steinman pin, and excellent traction was accomplished.

Fractures and foreign bodies in the knee-joint with suppuration presented the most difficult problem of all. Every form of drainage was used with very poor results. Several cases came to amputation, and in a few cases where the condition of the patient warranted it, resection of the knee-joint was done. It seemed to us from our experience with this type of case that early excision of the knee-joint offered the best chance of recovery where the leg was not sacrificed. Of course, this does not apply to the group of cases in many of which it was possible to do an early and efficient debridement and closure with excellent results. Amputations were done by the Guillotine method and closed by traction. In some cases after trac-

tion on the stump had been used for a time the stump could be closed by suture. Traction was utilized, also, in the closure of very large wounds; this was accomplished by means of adhesive plaster and rubber bands which were laced across the wound, giving a steady pull on both sides.

Of the many things learned in the treatment of war injuries, I think the most important is that the success of any procedure in surgery is not so much due to the particular method used, but to the skill and judgment of the surgeon who is using it. There has been a lot of argument about the use of various antiseptics and different types of splints, but as a matter of fact, good results were obtained by all of the methods in the hands of good men and poor results were obtained with any of them, where carelessness and lack of skill were displayed. It is only after having experience with a large group of cases that one begins to find this out and the war afforded an opportunity for many of us to have that experience with a large number, even though the latitude of work was limited.

Figures 39, 40, 41, 42, and 43. The Treatment of Fractures of the Extremities by Means of Suspension and Traction by Maj. J. A. Blake and Lieut. K. Bulkley, M. R. C. Surg. Gyn. and Obst. Vol. XXVI, March, 1918.

CHAIRMAN: Any further remarks?

DR. SARLES: In this extension apparatus did you get sloughing of the soft parts from pressure over the tuberosity of the ischium in this form of extension and counter extension?

LIEUT. SNODGRASS: No, that was not our experience. When we had that condition arise it was through carelessness.

DR. SARLES: I mean in using your pressure against the fleshy part in order to get the extension required.

LIEUT. SNODGRASS: You mean by the use of the Thomas splint. That is true, but as I said before after they were brought into the hospital we were able to relieve this counter-pressure by attaching a weight directly to the limb, thereby obtaining direct extension.

DR. LAWHORN: I might say that in some of these cases, in quite a few of them, I found that the foreign particles were working out, and some of them were near the surface, and you can get at them sooner or later, and I think it will be a good idea, if they are anywhere near the surface, to cut them out; they will bother the men considerably, and it will be a good idea to remove them as soon as you see that they are near the surface. I remember one man recently; I think I picked out about ten pieces out of one man's hand, and another one about six or eight pieces out of his arm. Now then, each one of these had been cleaned up before, but when they did see the fragments they came in. I think it is a very good idea to remove these foreign particles; those are the ones you didn't get before.

DR. ROGERS: I would like to ask the last speaker, in taking out these foreign particles, do you get any reactionary infection? We were taking out a lot of them out of old wounds. I am curious to know how that is going to act later on.

DR. LAWHORN: I only used iodine on these men, and I didn't have much trouble. Some of these men are coming back to me, and I didn't have any trouble. The last one I had was about three weeks ago.

DR. C. H. LEMON: In studying the pictures that have been shown to us of fracture of the femur, it is noticeable that the various base hospitals gradually came to the use of the Hodgen splint. Now the Hodgen splint was a product of the Civil War. Doctor Hodgen, as some of you may know, was a Missourian. I have been giving a great deal of attention to the treatment of fractures for some twenty-five years prior to this war. I have visited the principal hospitals of this country east of the Mississippi River, and I must say that prior to the outbreak of the war I never once saw a Hodgen splint in use at any hospital in this country. I have never seen it used in any hospital in this city either before or since the war. Now, there must be a reason for this, and I think the reason is that in military practice it was found to be the most practical apparatus for use with fractures complicated by extensive wounds of the soft parts; but, I am a little bit anxious as to the application of this war experience to our civil practice. I am afraid that if the Hodgen splint is extensively used, as it probably will be by the men who used it and had experience with it in France, that there will be a great many defects, a great many abnormalities and vicious unions, and things of that kind, following its use.

No one who has been in France, who brought back pictures, has exhibited X-rays of these fractures after they were healed, that is, no one that we have had the opportunity of talking with.

Now, it would be very interesting if we could see at some of these meetings, the end results of the use of the Hodgen splint, and that will be the answer to its use. Personally, in civil practice and in a large experience in railroad surgery, I have found the occasional use of the Cabot splint with extension, a far better piece of apparatus. It occurred to me that in all these operations, with the shifting of a man's body in his sleep and that sort of thing, that there must be a great deal of movement of the fractured parts, and I just arose to call attention to what I believe is an element of danger in the use of this splint, which evidently served a substantial purpose in the Civil War and must have served an equally efficient purpose during the present great war, but I don't believe under conditions that obtain in civil practice that the use of the Hodgen splint will long be continued, because we have better facilities. In military practice we are not so much exercised about the perfect restoration of fragments as we are in the conservation of the limbs, and if they got union at all they must have been quite well satisfied under all the conditions, and I think that any firm, bony union would be considered an excellent result. But with the Industrial Commissions who are looking at our end results as shown by the X-rays, I do not think that the Industrial Commissions would be very well satisfied with the results that I believe must be shown in these war cases when they come to submit to us the end results.

(Applause.)

CHAIRMAN: Are there any further remarks in reply to Dr. Smith's inquiry?

DR. LEMON: I would like to say in that connection that I have had under treatment for over three years a policeman who dropped his revolver out of his pocket and the bullet passed through the middle of the oscalcis and I have operated on him three times and tried to fill the cavity, but at the end of three years it is still suppurating.

CHAIRMAN: We will listen to Dr. Snodgrass in regard to the use of ice-tongs.

LIEUT. SNODGRASS: I think as a general rule less trouble was experienced from the use of ice-tongs than from the use of the Steinman pin. We were unable to get the ice-tongs for use in our hospital so that I had no direct experience with this method, but in the cases where we used the Steinman pin we experienced very little difficulty and obtained excellent traction. However, this must be taken into consideration that in our hospital we did not have the opportunity to observe the end results in many of these more serious cases because we were continually called upon to prepare these men for evacuation to base ports or to special hospitals. It may be that those who removed these Steinman pins had difficulties which we avoided by having evacuated the cases before trouble developed.

REMINISCENCES FROM BASE HOSPITAL No. 1, NEW YORK CITY.*

BY G. N. BRAZEAU, M. D.,
MILWAUKEE.

I thank you for the courtesy of addressing you on my brief military career in the best army in the world. I had always coveted the privilege of seeing military service, but it began to look as though my opportunity had passed. Fate did not play truant with me, however, for in July, 1917, I was commissioned a medical officer and ordered to Base Hospital No. 1, New York City, for duty as an ophthalmologist. When a great many officers were being trained in the less desirable camps of the Middle West and the Southeast under the strenuous conditions of a rigorous winter, I felt for a moment as one of the elect when ordered to New York City. Neither was I disappointed in this. I was grievously chagrined, however, at not being ordered abroad for duty, as I felt it was the logical thing to do, since my long stay in France and my knowledge of its language and customs would have been of use where the dual languages were so much spoken.

I did not see the harrowing scenes of the battlefield, nor did I hear the incessant thundering of cannons and the bursting of shells, but I saw enough to satisfy the intensive longing one may have for war.

It is different, gentlemen, than reading about it when the fires are burning brightly and the winds blow cold outside. It is a pleasant sight to watch the battle-scarred veterans parade by, decorated perhaps, and to compliment them on their valor and for their sacrifices, but only they know what it all means. Only they realize to the fullest what separation and the joys of home-coming mean.

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*Read before the Eye, Ear, Nose and Throat Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1, 1919.

Everyone made sacrifices for the cause. And yet I think the medical officers' sacrifices were among the greatest for many reasons. They were glad to give, and now that the war is over and the carnage has ceased, we are again at our labors, some better and others worse for their experiences. Among the worst calamities that can befall a man is a wrecked nervous system. Because of age, for medical officers were advanced in years, were they particularly exposed to nervous strain with its horrible consequences. Youth has many advantages over age in an endurance contest. As far as spoken gratitude is concerned, we have had a surfeit of that. It was vox-pre tereat nihil, sound and sound and nothing more. We didn't expect much more, for the medical man's services have never received much other than empty praise. However, we have something above earthly possessions from which we cannot be parted. We were called, and we were not found wanting. They thirsted and we gave them drink. They cried out and we relieved their pain, and in the last moment, when their lamp of life was flickering, dying, we closed their eyelids and thought, blessings on you, little men.

War has a tendency to suppress the finer emotions and instincts in man, but the medical officers must ever keep theirs to the front. A moment's forgetfulness will bring down on him charges of cruelty and negligence that are not always deserved. At our hospital, I know that the men received attentions such as only the extremely rich could afford. The military part of our training was secondary to our medical and surgical practices. The government was most exacting about the qualifications of its officers. Our work was under continual scrutiny and both our happiness and our success depended upon an excellency of conduct and skill rarely required by any other institution or from any other body of men. Rivalry existed among us, and the desire to excel was as keen as it could be.

Unfortunately we were not administrators, for on that the government insisted. The profession was found inefficient and our system of education was seriously compromised. Pierce says that 70 per cent of the otolaryngologists were no good, and Jackson says the same. Moreover, that the country needs five thousand more specialists. Perhaps that's all too true.

While our ear, nose and throat men were cleaning out mastoids in very large numbers, Dr. Pierce claimed that among twenty-five thousand men there were only two cases. It was quite a reflection on the ear men. We certainly had many cases, for it seemed as if every other man had had an operation. Tonsillectomy was done on almost every sick man where tonsils were found. That I did not agree with. To believe in that practice would be to reduce our pathology and etiology of disease to a very simple formula. Our work was mostly reparative. In the beginning, the staff operated on almost everything that warranted interference, but after a short time it was found that the time of convalescence was too long before a man was fit for duty, so the practice was stopped. To me it did not seem just the right thing to send a man to battle with a pair of glasses on. Personally I objected to the fitting of glasses, believing that if men needed them enough to bring their vision to the army requirements, that those men should be kept for domestic service, and others sent in their place. Our department was conducted as a large clinic might be. We were strictly confined to the department we were assigned to and no one was to treat but those cases referred to him.

Group medicine was the practice adopted. If you failed in this you were guilty of insubordination. Exceptions were taken by certain departments to the general surgeon operating on everything. No one wanted to operate on the eyes, however, so we had no disagreements in that respect. Syphilis in every conceivable form was met at our hospital and immediately turned over to the syphilographer. The country had a good cleaning up of its defectives by this war. Our boys were not up to the standard by a long way. Military training compelling a thorough physical examination, would be a good thing if our soldiers never went to battle. The sheep would thus be separated from the goats, and benefit would accrue to both the men and the country. It would anticipate much poverty and crime in the future. Social preferments are not reckoned with in estimating the soldier, and by firm but gentle persuasion you smoothly gravitate to your proper level.

You are again, figuratively speaking, on the benches as on former school days. No less interesting nor less startling experiences are these, save in that your appraisal of the lectures and lecturers is greater. The military point of view is naturally foremost in your thoughts. You must

eat, sleep and drink militarism. Cooperation is thus obtained for that is the basis of military efficiency in the medical staff as well as among the line officers and men. To serve that end hospitals and camps like ours were quickly organized by the surgeon general's office.

You are a part of a composite body. Individual characteristics and tendencies must be suppressed. The medical staff is presumed to be ready for active service in the operating room. Consciously or otherwise, the department harbored no illusions and it sent its medical officers to school. Other than doing our duty, this was a splendid opportunity to an inquiring mind. Lectures, clinics and demonstrations at the hospitals and elsewhere were supplied us. Those in and out of the service labored when and where asked. Our close proximity to New York City gave us advantages not to be despised. Every facility, every courtesy was offered magnanimously to the student officers. Every library and laboratory received us kindly, while the government readily acquiesced in every way that might improve us.

Personally, I am thankful for much learning and many happy acquaintances acquired during my service. My introduction to the chosen library of the New York Academy of Medicine was sufficient reward for any sacrifice I might have made.

Please permit me to digress for a moment to call your attention to the wonders of ancient medical lore. The charm of the style, the clearness of the diction, the incomparable beauty of the illustrations in the books of these past masters, not excepting the wonderful knowledge they contained, and all gotten without the aid of the laboratory and our new instruments of precision, simply startled me.

These books, now relegated to the dark stalls of the library, should be resuscitated and read by every medical man.

In the beginning we were under the direct charge of the surgeon general's office. Later we became a part of the port of embarkation hospital containing sixty thousand beds. The men sent to us were in a pitiable condition. It is incomprehensible why men should be so indifferent to their physical well being in these modern times and in a land of plenty. I will but mention the epidemic of influenza. Our mortality was very high. Everything was done for the men and no pains were spared by the laboratories of investigation and at the bedside to discover some means of mitigating the morbidity of the disease, but all efforts proved unsuccessful.

Briefly, we had every disease known to hospital practice among men. The buildings were of the barracks type, such as can be seen at the Great Lakes Station. Many of us did not get across, much to our chagrin. Those who remained permanently attached to the hospital contented themselves with the thought, that they also serve who stand and wait.

I will close this article by relating to you a very interesting case that came to us from abroad supposedly having had meningitis. This man was 25 years of age, big and strong, his history sheet showed his having been sick for three months in France previous to his return to this country. He was brought to us on a stretcher, perfectly helpless and blind. Both eyes diverged outwardly, pupils unequal and dilated, no convergence power, no pupilary reaction to light or accommodation, fundus normal. The staff was undetermined as to the cause of this man's present condition. Many theories were brought forth as to the probable cause of his present condition; none however, seemed satisfactory. Some thought a possible paralysis; some thought of a cerebellar-pontine tumor, etc. On looking over the man I found no cause that might explain his condition. There was no appreciable reason for his blindness. He was very apathetic. Muscles did not appear atrophied. In other words, his general physical condition appeared good.

I advanced the thought that the man was a psychopath. It caused some merriment, and I was asked how to explain the condition of his eyes. I did not venture any further explanation than that in hysteria almost any function, voluntary as well as involuntary, could be inhibited. The case rested that way. Two weeks later, after the nurse had given him an alcohol rub, she left a little in the bottle on the night stand and turned to speak to the patient in the adjoining bed. While her back was turned the patient grabbed the bottle and drank the remaining alcohol and proceeded to clean out the ward. My diagnosis was confirmed, and two weeks later he was transferred to the Buffalo Military Hospital for the Insane.

Doctor—"Show me your tongue."

Patient—"What's the use? No tongue can tell how sick I am."

HYPERTENSION AND CHRONIC NEPHRITIS.

BY H. P. GREELEY, M. D.,
MADISON.

The normal kidneys weigh about three and a half to four ounces apiece or about one-third of 1 per cent of the body weight. But they receive 5 per cent of the blood output of the heart at each beat. They therefore receive fifteen times as much blood as you would expect from their weight. About 600 litres of blood flow through the kidneys daily in order to excrete one and one-half litres of urine. About fifty litres of dilute urine are excreted daily by the glomeruli, of which forty-eight and a half litres of water are reabsorbed by the tubules. This gives you a rough idea of the importance of the blood supply in renal physiology. The infinite ramifications of the renal arteries are well shown in erosion specimens of the normal kidney. By perfusing a fresh, normal kidney with metal of a very low melting point and then digesting off all the kidney substance, an intricate network of vessels is left which in density makes up a mass closely resembling the kidney itself. Take an arteriosclerotic kidney and perfuse it in a similar manner and the resulting erosion specimen resembles an old branching tree whose limbs are dying. No wonder the arteriosclerotic kidney causes disturbance in renal physiology. With perhaps one-tenth to one-fiftieth as free a circulation, blood must be perfused ten to fifty times as often or under higher pressure in order to accomplish the same work. Theoretically, lesions of the kidney might affect primarily the glomeruli or the tubules in the vessels. Actually pure types of nephritis seldom exist. There is generally a combination of affected elements, (a diffuse process) and finally the vascular changes seem to be of great significance.

The common bugaboo of practice today is high blood pressure. People who turn up in a doctor's office with high blood pressure generally receive a death sentence something as follows: Apoplexy, uremia or heart failure. I do not mean that these patients are told this by the physicians invariably, but the physician generally tells a relative or makes a mental reservation of this prognosis to himself.

Far be it from me to belittle the importance of high blood pressure. What is necessary is not a belittling, but an increased amount of attention given all these patients so that one can properly evaluate the particular condition. High blood pressure is only one sign and oftentimes is the least important one. It is only the guide post to further investigation.

Instruments for measuring blood pressure have been in common use by many for a long enough time, so that we know many instances of people who have been in very fair health for periods of ten to twenty years with pressure of 190 to 210. So it is up to us to see that patients whom we are too prone to give a bad prognosis today won't laugh at us ten or fifteen years hence, for we may beat them to the grave.

What lines of investigation are necessary if we are to give these patients a square deal? First and foremost, an etiological diagnosis. What produces chronic nephritis and vascular degeneration and essential hypertension (without gross pathological changes)?

First, sequellae of acute infections.

Second, sequellae of acute nephritis.

Third, chronic toxemia from focal infection, sinus, tonsils, teeth, gall bladder, g-u infection, syphilis.

Fourth, chronic toxic drug poisoning, lead, etc., tobacco.

Fifth, disturbances of metabolism, autointoxication, from bowels, from overeating and underexercising, from nerve strain and vascular spasm and vasomotor disturbance, obesity, and disturbances at the menopause.

It ought not to be necessary to more than mention these etiological factors to impress upon physicians the necessity for controlling them when possible or eradicating them completely. We then have the task of estimating the amount of damage already done and differentiating between the various types of renal change, arteriosclerotic, interstitial or essential hypertension, without definite renal pathology.

What is the pathologic physiology of the individual case under consideration? Fortunately we are reaping the benefits now of the enormous amount of research that has been done upon renal function and renal pathology. We can discard most of the excessively complex technical methods of determining renal function and use some few simple procedures that will give us a great deal of information.

First, the accurate use of blood pressure instruments determining the diastolic pressure and

the pulse pressure. A normal or slightly increased diastolic pressure no matter how high the systolic pressure is, is incompatible with severe changes in the kidney resulting in deficient function with retention of waste products in the blood. A diastolic pressure of 120 or over which is constant, means a kidney that is working to its utmost capacity all the time and is still falling down on the job. Retention of waste products is here fairly common.

The Sulphonephenolphthalin dye test is simple, direct and very valuable. If your patient has a total renal function of 45 per cent or over and all factors which would tend to make the condition progressive have been removed, you are safe in giving a good prognosis only slightly guarded.

The examination of the urine comes next, but is perhaps of greatest importance. We might as well discard the conventional urine examination as useless. The testing of a single specimen of urine for gravity, color, acidity to litmus, presence or absence of albumen, as helps in prognosis or guide to treatment is utterly useless. A twenty-four hour specimen is absolutely necessary, and even then *these* tests are of little value. Osler long ago wrote a paper on the advantages of albumen in the urine in elderly people with renal changes. On the other hand, the *absence* of albumen may be associated with the severest types of disease.

The most valuable test is the fractional test over a period of twenty-four hours, and determination of gravity and quantity relationships. The test is the simplest of all tests and gives a good deal of information. Its performance is as follows: The patient collects urine in separate containers at two hourly intervals from 8 A. M. to 8 P. M. During this time the patient eats three average meals, avoiding an excessive use of salt and taking a pint of liquid,—water and milk or weak tea,—at each meal. This insures enough water for the tests without any danger of an excess of liquid. In addition, the patient is warned not to take *any liquid* between meals. The night urine is collected in a separate container. These seven specimens are then examined, the gravity and exact quantity of each being taken. A normal kidney will respond to the test as follows: The day specimens will aggregate about one litre, the night amount will be 300 to 400 c.c. The ratio of day to night will be about two to one. The gravity of the different specimens will show a wide variation, normally ranging from 1010 to 1020, or 1015 to 1025, or even higher. There will be a difference of 9 or 10 between the lowest and the highest gravity. With beginning renal insufficiency due to interstitial changes these relationships change. There may be a diurnal oliguria and a nocturnal polyuria and an inability of the kidney to secrete a concentrated urine, a urine of normal or high gravity. The more marked the nocturia after it exceeds 600 c.c., the more pronounced are the interstitial changes. The more constant the gravity of the fractional specimens, the greater impairment of function. If the widest variation in gravity is seven or eight, a slight to moderate impairment exists; if the widest variation is five or less, the impairment is still greater. Often in the severe "contracted kidney" the gravity approaches a "constant" which is generally around 1009-1011.

In the arteriosclerotic group and in the cases of essential hypertension there is no loss of ability to concentrate the urine and no nocturnal polyuria. Rather is there an oliguria throughout the twenty-four hours.

The sulphonephenolphthalin test is too well known now to need explanation. Together with the other tests, it furnishes a most accurate and valuable index of the total kidney function.

Of all the mass of blood chemical tests that have been developed in recent years, we can pick two or three fairly simple ones and at the same time extremely valuable, particularly in the judgment of the prognosis of a given case.

The degree of retention of waste products goes apparently pari passu with the loss of function. Uric acid is the first substance to be retained, then follows urea and creatinine.

The examination of the blood for urea and creatinine are relatively simple and can be learned by any well-trained technician. A urea figure of under twenty mg. per 100 c.c. of blood is normal. In uremia the urea may go to 200 mgs. per 100 c.c., and any creatinine figure over 5 mg. must be looked upon as a serious prognostic sign, not compatible with long life, the normal creatinine figure being 1.5 mg. per 100 c.c. of blood.

With the aid of these three tests:

1. Fractional Specimens,
2. Phthalein,
3. Blood urea and creatinine,

we are ready to map out treatment and give prognosis.

The main value in these refinements of diagnosis lies, of course, in the differentiation between the progressive contracted kidney and the high blood pressure case on a purely arteriosclerotic basis, and the case of so called essential hypertension. In the latter instance, our prognosis is for many years of relative comfort and usefulness, and in the former, a year or two or less. Too often hypertension is used as the sole index in which the giving of an unfavorable prognosis is the rule.

The dietary treatment in the main rests upon the principle of caloric feeding, with a low protein and high carbohydrate intake. The carbohydrates chosen should be protein poor, such as farina, hominy, rice, corn starch, tapioca, bananas and all fresh fruits and many green vegetables, such as lettuce, celery, spinach, carrots. Total protein requirement three-fourths grams per kilo or less. Foods containing phosphate and potassium may be better avoided. Bread made with phosphate baking powder is not suitable for the severer cases. Meat,—choice of red or white a matter of indifference. Animal organs strictly interdicted.

Do not advise irrational restriction of acid fruits which are the best means of correcting acidity and supplying organic acids to bind alkali in the body. Difficulty of excretion is the only bar to these substances. The time is past when we can hand this class of patient a diet slip with a "forbidden" and "allowed" column of foods. Rational treatment means a careful individualization of each case and a dietary prescription to meet his needs. If the average individual requires thirty-five calories per kilogram body weight and takes one and one-half grams of protein per kilogram body weight, the average case of hypertension would require much less,—twenty to twenty-five calories in stout people with a protein intake of one-half a gram per kilogram or at most three-fourths of a gram, (about the Chittenden figure). Always there should be in the diet sufficient bulk and a relatively high carbohydrate allowance, as this helps *save* protein to a remarkable degree. The carbohydrates should be chosen with due regard to their protein content as indicated above. Otherwise the protein allowance will be overstepped.

Drug treatment. The use of diuretics is absolutely contraindicated. Sodium chloride sometimes needs restriction, particularly in the interstitial kidneys. Water and fluids should never be forced and in the cardiac-renal and arteriosclerotic should be carefully regulated.

Saline cathartics where the diet is carefully controlled can be largely eliminated and be reserved for the contracted kidney cases and those with severe oliguria only.

Physical measures: Moderate exercise is of extreme value in mild cases, and massage even in severe cases. Mild neutral baths are very valuable in promoting excretion through the skin and in controlling nervous symptoms.

Close study and individualization of cases is necessary to decide whether cerebral, cardiac or general metabolic symptoms predominate. It is of the utmost importance to give encouragement and not to make sudden changes in habits of life and work. Don't suddenly invalid these patients and rob them of interests and work, but gradually reduce their work with the cultivation of a hobby on the side.

Conclusion: The things of greatest importance then, are first, the classification of your case on an etiologic and functional basis, which can only be accomplished by careful study, history, physical examination and laboratory diagnosis. This establishes the foundation for treatment which rests upon *caloric* feeding, a restriction of both the kind of food and the quantity of food; the least alarming prognosis justifiable and the least possible change in routine habits that is compatible with proper hygiene. Where great changes are necessary make them slowly. Physical measures must not be neglected, and above all, give encouragement to your patients and give them the benefit of the doubt. They may be able with moderate activity and careful eating to live many years comfortably and happily.

Among the blinded ex-service men there was a curious case of a negro who seemed to be blind in both eyes. Neither eye could perceive five fingers at any distance. He had faint light perception and there was hope for restoration of sight in one eye. He kept his eyes shut.

The man was adjudged eligible for retraining under the Federal Board for Vocational Education and was about to be assigned to the Maryland Workshop for the Blind, when another physician managed to persuade the negro that he was not blind.

The physician's report reads as follows:

"He was suffering from psychoneurosis hysteria giving rise to marked blepharospasm and photophobia and amaurosis. All physical findings negative. Treatment by suggestion completely cured up all symptoms and I discharged this man cured."

ETIOLOGY AND PATHOLOGY OF CHRONIC GASTRIC AND DUODENAL ULCER.*

BY DANIEL HOPKINSON, M. D.,
MILWAUKEE.

The etiological factors concerned in the production of gastric and duodenal ulcers which eventually become chronic in type are 1, trauma; 2, circulatory disturbances; 3, disturbance in the nerve supply, that is neuropathic: 4, gastric acidity; 5, the introduction of toxic and irritative chemical substances; 6, bacteria; and 7, disturbance in the endocrine glands.

1. Trauma—Traumatism as an initial factor, whether internal or external is probably not essential for the production of a true ulcer, but may lay a foundation for the development of the same when imposed upon by other factors usually accompanying and apparently necessary to their production. The situation of the gastric ulcer in the actively muscular pyloric end exposes the surface to more or less intermittent mechanical injury, which aids in the chronicity and failure to resolve. Mere excision of small portions of the mucosa is most frequently followed by healing and repair of lost tissue in a short time, unless this removal be accompanied by such circulatory disturbances as deprive the tissue in the immediate area of its nutrition to a great extent.

2. Circulatory Disturbance—The foundation for the destructive changes and diminished resistance of the local tissues in ulcer formations in these organs is in all cases some vascular disturbance which may be the result of embolism, Virchow, thrombosis, defect in the vasomotor control resulting in overdistension or hypercontraction, either of which may interfere with the local blood supply. This area of ischemia may result from spastic contraction of the smaller arteries or of the musculature surrounding the vessels, both causing either occlusion of the artery or a statis of the blood in the smaller vessels, through a vaso dilatation. The finding of embolical lodgements and thrombosis is not frequent however.

3. Neuropathic—Much experimental work has been done to show the relationship of local injury to the nerve supply in these ulcer productions and their persistence; also injuries to the central nervous system being frequently followed by gastric ulcer formation, this as a causal factor was considered by many investigators; experimental severing of the vagus was followed by ulcer production, many of these ulcers terminating in perforation. Martin, however, concludes that beyond lowering the resisting power of the tissues of the stomach and also inducing hyperacidity, there is little connection between the injuries of the nervous system and the formation of gastric ulcer.

4. Relation of Gastric Acidity—The fact that gastric ulcer is most frequently located in that portion of the stomach where hydrochloric is secreted and the reaction most commonly acid, in contradistinction to the neutral or alkaline condition of the cardia, suggests the probable influence of gastric acidity. While all gastric ulcers are not accompanied by hyperacidity the persistence of the ulcer may be more or less influenced even in the presence of normal acidity; the other factors such as disturbed nutrition having so lowered the resistance of the tissue to the action of the gastric juice that hyperacidity is no longer essential. Bolton says that various degrees of delay in healing of ulcer are due to hyperacidity; and that gastric juice owes its destructive power primarily to the hydrochloric acid contained in it, the damage varying in proportion to the strength of the acid present. An over active gastric juice is one of the factors necessary for the production of chronic ulcers. That hyperacidity prevents the healing of gastric ulcers experimentally produced on dogs was shown by Matthes. These ulcers were traumatic, the hyperacidity merely favoring their chronicity. I believe that one may conclude that the gastric juice does in some way prevent the healing of these ulcers.

5. Toxic and Chemical Substance—Any irritative chemical substance which when introduced into the stomach, may be followed by the production of a gastritis, may lay the foundation for the development of a chronic ulcer. To these may be added hot and cold drinks which temporarily remove the protection normally possessed by the mucosa and result in circulatory disturbances which may be more marked in some areas than others, intense local action in the pyloric extremity laying the foundation for ulcer production.

6. Bacteria—In 1913 Rosenow experimentally produced gastric and duodenal ulcers by the intravenous injection of certain streptococci into rabbits, dogs and monkeys. The route of infec-

*Read before the Milwaukee Medical Society, March 23, 1920.

tion according to Hardt, who later made similar experiments making observations through a pawlow stomach pouch, must be the blood stream, as local injections of streptococci into the submucosa were unsuccessful. He also states that even in the absence of hyperacidity these ulcers were still produced. According to Rosenow, focal infections, streptococcal in nature, of the tonsils and teeth, may give rise by their dissemination to gastric and duodenal ulcers in certain strains of streptococci possessing these selective affinities. He calls attention to the aggravation of ulcer symptoms following sore throat. He has also found in the walls of these ulcers streptococci suggesting their etiological relationship. Experimentally ulcers have also been produced by the intravenous injection of staphylococci and bacillus coli (Steinhartes). Helmholz has isolated streptococcus veridans from duodenal ulcers.

7. Endocrine Glands—F. C. Mann experimentally produced ulcer formation in the stomach and duodenum accompanied by hyperacidity, by removing the suprarenal glands. He attributes the initial lesion to a disturbance in the glandular secretion which results in a disturbance in the vegetative nervous system, both vagus and sympathetic, and because of this disturbance of this internal secretion the terminal fibers of the vagus may cause spastic contraction of the muscularis mucosa resulting in the occlusion of a small artery in a localized area.

Age—Gastric and duodenal ulcers are found most frequently between the 30th and 40th years, less frequently as age advances and rarely below the 20th year.

GASTRIC ULCER.

	Male	Female
Smithies	3	1
Hartmann	—	more frequent
Peck	70	30

DUODENAL ULCERS.

	Male Per Cent	Female Per Cent
Mayo	79	21
Hartmann	more frequent	
Peck	83	17

PATHOLOGY.

Gastric ulcers are most frequently found in the pyloric end and along the lesser curvature; more often in the posterior than in the anterior wall. Duodenal is more frequent than gastric ulcer; according to Mayo, the chronic callous ulcer of the duodenum is usually on the anterior wall 44—posterior 19 in the first one and one-half inches of the duodenum. Mayo finds that the frequency of duodenal ulcer compared with that of gastric ulcer is as 73 is to 27. Peck gives similar figures. Chronic ulcers of both duodenum and stomach are usually single, may be multiple. Most observers give the percentage as 75 or over. When multiple they may be found in different stages of healing. The size of the ulcer varies very greatly from less than 1 c. m. to 10 c. m. or over. These ulcers are usually round, oval, or pear shaped and may present a terraced, funnel or saucer like appearance. In practically all the cases the destruction of the mucosa is the largest, with gradual decrease until the floor of the ulcer shows the coat forming the same has suffered least destruction. In rare cases, however, an undermining of the mucosa may take place, the opening into the stomach cavity being small. The terraced or funnel shape is the picture usually presented. The margin of the ulcer may be somewhat elevated presenting a narrow zone of induration. The floor of the ulcer and its walls are usually smooth, rarely presenting ragged, necrotic surfaces. The floor may be formed of any one of the coats of the stomach or duodenum, or these may be entirely absent at this portion of the ulcer—the floor being formed by the surrounding tissues or organs which become adherent in their attempt, often successful, at preventing a perforation into the general peritoneal cavity. The adherence of the pancreas, spleen and splenic vessels, also liver, to the base of the ulcer is frequently followed by more or less destruction with necrosis and scar formation in these organs. On the floor of the ulcer close observation frequently results in the finding of an exposed vessel which may be thrombosed, and has probably given rise intermittently to more or less severe hemorrhage. Fistulous tracts may be met with running between the stomach and adjoining organs and sometimes leading to perigastric abscess cavities. Microscopically there is usually an absence of active inflammatory changes in the walls. There is a slowly progressive and periodic infiltration of lymphocytes with proliferation of connective tissue resulting in replacement fibrosis. The borders of the ulcer often show epithelial hyperplasia with displacement in the glandular structures in the

wall. The various coats become more or less intermingled by the replacement fibrous tissue. The blood vessels in the immediate vicinity are frequently more or less obliterated by thrombosis and end-arteritis and occasionally embolism. This change however is not observed in the vessels at a distance from the ulcer, although it is usual to find in the adjoining mucosa a gastritis with parenchymatous hyperplasia. While many of these ulcers undoubtedly heal, their former situation being indicated by a small scar, the condition which allowed of their becoming chronic often persists and we have as the result the various deformities following extensive involvement and scar tissue formation, such as the contracted pylorus, the hour glass stomach, the perigastric tugging on other organs, etc. Further, the progressive destruction which is not kept pace with by adhesive defenses may result in perforation into the peritoneal, pericardial and pleural sacs. Hemorrhage which is a common and usual accompaniment of this condition may be of such severity as to produce death. In addition to these the transformation of the simple chronic ulcer to the carcinoma is of sufficiently frequent occurrence to place it as an important predisposing etiologic factor in the development of carcinoma of the stomach and duodenum. Wilson has called attention to the fact that carcinoma develops from epithelial tissue displaced by ulcerative changes or diverticula. The margin of the ulcers show hyperplastic mucosa with displaced islets of tubular epithelium cut off from the surface; many of these islets are destroyed, others proliferate and in addition still others infiltrate the surrounding tissues passing into previously formed scar tissue especially at the border where nutrition is not poor. The series investigated by Wilson show evidence of previous ulceration in 70% of cancers of the stomach, thus establishing the relation to carcinomatous change. Duodenal ulcers which remain nonmalignant, when extending into the pylorus show a tendency to become malignant.

Cancer is preceded by simple ulcer formation according to Robson in 59.3% of the cases, Moynihan in 66.1% and Rodman in 50% of the cases. Others working largely in the field of internal medicine consider this occurrence not so frequent; Jacobi gives 3% as developing upon scars and Hyem and Lion as 20%

THE RED CROSS ROLL CALL.

The fourth Red Cross roll call will be held from Armistice Day, November 11, to Thanksgiving Day, November 25, next. Hereafter every anniversary of the end of hostilities in the World War will be the occasion for the American public to renew its Red Cross allegiance through dollar memberships.

This was made known recently by Dr. Livingston Farrand, chairman of the Central Committee, when he announced that as a result of the last roll call the Red Cross now has more than ten million members. This is more than twenty times the pre-war membership of the society and does not take into account the fourteen million school children who are members of the Junior Red Cross.

The membership dollars will be used to further the gigantic peace time activities of the American Red Cross, which are:

To continue work for America's veterans of the World War, particularly the disabled.

At the Red Cross Institute for the Blind near Baltimore more than half of the American soldiers blinded in the World War have already been trained for living and earning without their sight.

To serve our peace-time army and navy.

The government has requested that the Red Cross continue this responsibility, particularly that of acting "as a connecting link between the enlisted men and their families."

To develop stouter national resistance to disease through health centers.

The Red Cross chapter in Seattle, Wash., alone is establishing twenty-five Red Cross health centers in the towns of King and Kitsap Counties.

To increase the country's nursing resources and to cooperate with official health agencies.

When Influenza visited New York City, the Red Cross supplied 12,600 blankets, towels, nightgowns, layettes, and other sickroom articles within a few hours. In Chicago, 14,000 women trained by the Red Cross during the war were called to sickroom service.

To continue preparedness for disaster relief.

Mobile relief units, consisting of food and medical supplies, are stored in Red Cross warehouses all over the country. In time of disaster they can be rushed to the stricken community.

To continue home service and community work.

Red Cross home service workers are in forty-five U. S. Public Health Service hospitals, with a possible population of 10,000 patients.

To complete relief work among the war-exhausted and disease-ridden people of Europe.

Ten millions of the 40,000,000 souls in the Balkan states alone were beneficiaries of Red Cross bounty in seventeen months of relief work there. The food and clothing and medical relief supplied are given as "gifts of the American people."

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EDITORIALS

Your Debt

"Every man owes some of his time to the upbuilding of the profession to which he belongs."

—Theodore Roosevelt

STATE OF WISCONSIN GENERAL HOSPITAL.

GOVERNOR PHILIPP signed the bill for the establishment of a state hospital in Madison, June fourth. The act creating the new hospital, passed by the special session of the legislature, provides:

"There shall be established in connection with the Medical School of the University of Wisconsin at Madison a state hospital to be known as the State of Wisconsin General Hospital." It provides that "it shall be under the control and supervision of the Board of Regents of the University, that the University infirmary and the Bradley Memorial Hospital shall be a part of same, that it shall be utilized for such instruction of medical students, physicians and nurses and for such scientific research as will promote the welfare of the patients committed to its care, and assist the application of science to the alleviation of human suffering."

The law under which the hospital will be operated is similar to statutes enacted by the states of Michigan and Iowa. Any patients likely to be benefited by hospital treatment who can not or whose friends or relatives can not afford to pay for such treatment may be sent to the hospital at state or county expense. Provision is also made for transportation of patients and attendants at public expense when this is necessary.

The cost of construction will be largely borne by an excess left in the Soldiers' Bonus fund. It is estimated that it will require three years to build the institution which will have a three-hundred bed capacity.

The bill appropriates $750,000 for the hospital building, $150,000 for the construction of a nurses' home, and $450,000 for furnishing and equipment. There was practically no opposition to the bill and its passage marks a new era in Wisconsin medicine. It will make possible a four years' course in medicine at the University. The law is published on page 83.

DR. ERASTUS B. WOLCOTT.

A MONUMENT to the memory of Brigadier General Erastus B. Wolcott, a pioneer Wisconsin physician, was dedicated at Lake Park, Milwaukee, June 12th. The E. B. Wolcott post, G. A. R., had charge of the dedication cere-

monies. The monument is the work of Elbert R. Ross of New York City.

The motto of the post, "Fraternity, Charity, Equality and Devotion to Country" and the post insignia appear in the granite of the statue's base. The inscription is:

"BRIGADIER GENERAL ERASTUS B. WOLCOTT,
Surgeon General of Wisconsin in Civil War and for Thirteen Years Afterward.
He Lived a Blameless Life,
Eminent in His Profession,
Delighted to Serve His Fellow Men,
City, State and Nation."

Addresses were given by Governor Philipp, Mayor Hoan, Colonel Watrous, Colonel Crain, Dudley Crafts Watson, and Wade H. Richardson.

Doctor Wolcott stands out in the history of Wisconsin as probably its most prominent physician. He was born August 18, 1804, at Benton, Yates County, New York. His parents, who came from Litchfield, Connecticut, were among the earliest settlers of that state. Doctor Wolcott began the study of medicine in 1821 with Joshua Lee, an eminent surgeon in New York, and received a diploma from the Yates County Medical School in 1825. For four years he attended the medical college of the Western District of New York where he took his degree in medicine and surgery.

In the spring of 1835, he was examined by the Board of Army Surgeons and received the appointment of assistant surgeon in the U. S. Army, January 1, 1836, and not long after was stationed at Mackinac. He resigned in 1839 and in the spring of that year came to Milwaukee. He was stationed for some time at various army outposts but, chafing under the limited opportunities, resigned from the service and located permanently in Milwaukee.

He was married to Elizabeth J. Dousman in 1836. A son and a daughter were born to this union. Mrs. Wolcott died in the autumn of 1860.

In 1842, Doctor Wolcott was made Surgeon General of the state militia by Governor Doty. In 1846, he was made colonel of a regiment of militia and in the same year, Major General of the First Division, Wisconsin infantry. He was appointed regent of the University of Wisconsin in 1850. Immediately after the attack on Fort Sumter, he was appointed Surgeon General of the state of Wisconsin and in 1866 was appointed by the U. S. Congress as manager of the National Home for Disabled Soldier Volunteers.

He was married to Laura J. Ross, M. D., on October 12, 1869.

Not only was he active in medical practice but he also built the first mills in West Bend, Washington County, Wisconsin, and with others the first mills at Humboldt. He early acquired a reputation as a surgeon and was a fearless operator. Doctor Wolcott performed the first nephrectomy recorded, the patient recovering.

Of iron will and great personal courage, he had a woman's heart but a hand of steel; courteous and affable in manner and of most dignified bearing, tall and straight as an arrow. The best evidence of the esteem in which he was held by his fellow citizens was the deserved compliment of naming the great army post in Milwaukee in his honor, the E. B. Wolcott post, G. A. R. Doctor John L. Yates, Milwaukee, is a grand-son of General Wolcott.

COMMUNICABLE DISEASES AND GOOD CITIZENSHIP.

(*Frame this for your office.*)

DURING the war the wayfarer traveling the States of the ordinary community was attracted by posters and placards in the windows which served as badges of honor for American homes, a small flag proudly displaying one or more stars, indicating the members of the household who had gone forth to make the world safe for peace-loving people. Another little banner indicated that all of the members of that household were members of and supporters of the American Red Cross. Other banners announced to the public that the residents of that house had loaned their financial resources to the Federal Government in time of peril in the form of subscriptions to the various Liberty Loans. No one felt that these banners were in any way ostentatious or indicative of the spirit of self righteousness. They were merely the indications of loyalty and patriotism and these mute evidences of that loyalty and patriotism gave strength to the Nation. The houses were marked with the mark of good citizenship.

It may be a far cry from the stars and stripes to influenza, and a long jump from patriotism to measles—but good citizenship is the same in time of war and in time of peace, and the more who generally desire to make the world safe for democracy in a spectacular way also desire to make the world

safe for the fellow beings in ordinary every-day life.

There is nothing ornamental or sentimental about the flaming red placard indicating the presence of communicable disease, but that placard on the door-post of the home is as distinctly a badge of honor as any of those banners which mark patriotism during war time. The man who views the placarding of his home merely with the thought of the personal inconvenience it will bring to him and his family and perhaps the financial and business loss he will entail, is as distinctly objectionable as a citizen as the man who placed his personal interest ahead of the public interest during a time of national peril. Whenever a communicable disease exists it is a time of community peril and the Nation is but a combination of communities.

The American people as a whole are fair and clean and honest. They may be thoughtless, but when made to think of the moral aspect of their action they are inclined to go right. If the average citizen can be made to see that his action in evading quarantine and in influencing the physician not to report a communicable disease, is an unfair, dishonest and cowardly act opposed to every principle of good citizenship, we are satisfied that he will meet his obligation in the majority of instances without hesitation.

The placard of communicable disease on the door-post indicates that within the house in all probability there lives an honest citizen who employs an honest doctor.—*Illinois Health News.*

THE JOURNAL CLINIC

CLINIC OF MILWAUKEE COUNTY HOSPITAL.

BY L. M. WARFIELD, M. D.

CASE 1. A well developed and well nourished white woman, 26 years old, was brought to hospital by ambulance on March 5, 1920. She was irrational, tossing herself about and rolling her eyeballs. She talked continuousy, there was blood-tinged saliva extending from the mouth. All attempts to get responses to questions were unsuccessful. From her relatives we learned that five weeks before admission she had influenza followed by pneumonia. This was complicated with a purulent discharge from the right ear. She then became drowsy, depressed, muttered to herself and finally became so unmanageable that she was brought to hospital. At entrance the temperature was 97° F., the pulse 112, respiration 24. There was incontinence of urine and feces. She was so violent that she had to be put in restraint. The pupils were unequal, the right larger than the left, both reacted to light. There was no discharge from either ear but examination with the otoscope showed a perforation of the right tympanum. There was some definite rigidity of the neck and Kernig's sign on both sides. There was no stiffness or paralysis, no nystagmus. Glands were not palpable except in groin. There were a few crackling rales at the bases of both lungs posteriorly. Heart sounds were clear, but rapid. The abdomen was natural, no abnormalities were found. Knee jerks were present, no Babinski sign. Blood pressure 122—88. Leucocytes 10,800. Urine (catheterized specimen) was negative. Spinal fluid was under considerable pressure, clear, 5 cells to cu. m. m., globulin and W. R. negative. She gradually became quieter and passed into a comatose state with somewhat stertorous respiration. The temperature rose higher each day until on the sixth day it was 106° F. and pneumonia was found in the right lower lobe. Relatives insisted upon taking her home in spite of protests. She died in the ambulance. No autopsy was obtained.

DISCUSSION.

We diagnosed this case encephalitis lethargica. It was not of the usual type, but it did not conform to any of the types of meningitis. It was not uremia, poisoning with drugs, or fracture of the skull. Although there were stiffness of the neck and Kernig's sign the spinal fluid was normal except for increased pressure.

The wild delirium at first was puzzling but cases are being reported with such onset which later passes into coma. This case seemed to belong to that group.

Usually the cases begin with paralysis of one of the cranial nerves usually the 3rd, 4th, or 6th. Double vision is often the first complaint. One case seen by the writer in consultation had as the initial symptom inability to speak the correct word in a sentence. Sleepiness and drowsiness followed in twenty-four hours. This case died within ten days of onset.

A recent article by Simon Flexner in the Journal American Medical Association summarizes the subject and should be widely read. We are evidently dealing with a new disease, or rather one new to us. All physicians should inform themselves upon the subject. In and around Milwaukee there have been more than a dozen cases in the past year. Most of the cases died but there have been recoveries even after hemiplegia in the course of the disease.

As a contrast to this is CASE 2.

A foreigner, Austrian, aged 52, entered hospital by

ambulance on March 22, 1920. He was brought from Hanover Hospital where he had been for six days. Pneumonia and spinal strain were suspected but X-ray failed to show anything abnormal. On admission he seemed to be in coma. He could be partially aroused but could not speak. Arms and legs were almost constantly in motion so that he had to be put in restraint. Respirations were deep, 34 to minute. Pupils *dilated.* There was general passive resistance to movement but no definite spasticity or flaccidity. The knee jerks were present and equal. No Babinski. He was a spare man with no edema, with a fair color. Pulse was 114 to the minute, regular. The apex beat was strong, the heart was not enlarged. Lungs were negative. Blood pressure 180-100. There was incontinence of urine and feces. The temperature by axilla was 103° F. The interne's impression was that the man had uremic coma.

From his wife we learned that he was a teamster. On March 6, 1920, he worked during the morning but at noon complained of severe pain in his back low down on the left side. It was said to be lumbago. He was given medicine and hot applications. For a week he remained at home with only the complaint of back pain. But about March 12 in the evening he gradually became irrational. Next day he was most violent, tore his clothes off and would not remain in bed. He was sent to Emergency hospital where he remained two days and seemed to be sensible again. There he was diagnosed pneumonia. He was then taken to Hanover hospital where he became gradually worse.

On the morning following admission I made the following note: Patient lying unconscious, breathing hurriedly, pulse rapid and weak, but regular. Slight twitching of muscles, no paralysis, no edema. Abdomen somewhat retracted and muscles tense. Liver enlarged by percussion. Pupils slightly dilated, unequal, left the larger. Slight tendency to ptosis, conjunctivae injected, marked rigidity of neck muscles. Both arms resist passive movements, right distinctly more so. Incontinence of urine and feces. Eyegrounds show dilated veins with pulsation but no blurring of discs.

The urine collected with difficulty showed albumin and casts. There were 50,000 leucocytes.

On the supposition of the interne that the case was uremic coma, blood urea and creatinin were obtained. The former showed 13.5 mg., the latter 1.6 mg. per 100 c. c. of blood. These are normal figures. Six attempts were made by the ward interne to make lumbar puncture. No fluid was obtained. They were reported as "dry taps." The patient never became conscious and died March 24th, in coma.

DISCUSSION.

My own impression of the case, as the man lay before me unconscious, was that he had tuberculous meningitis. (And by the way, tubercular meningitis is incorrect. Tubercular means with nodules, and is correct in such connection as tubercular syphilide.) We have seen just such pictures as this man presented where the case was proved at autopsy to be that disease. In one man about 45 years the time from sudden onset to death was eight days and the spinal cord was covered with a gelatinous exudate in which numerous tubercles were imbedded. Tuberculous meningitis is no respecter of age. The sure signs of meningitis in a more or less scrawny man certainly suggested that rather than the epidemic form. When some history was obtained we naturally considered the possibility of a pneumococcus meningitis. Leucocytosis is present in all forms of meningitis, but not so apt to be as high as 50,000 in the tuberculous form. Lumbar puncture would have settled the point. Six attempts were reported with no result. In other words, the operator never reached the meninges. Possibly there might be fluid so thick that it would not run through the puncture needle. I have never seen it. To my mind a "dry tap" means that the operator failed to get into the meningeal space. There is no such condition as a "dry tap." So we were at sea as to the cause of the meningitis. Autopsy revealed an unusual finding, streptococcus meningitis. No primary focus was found. There was purulent exudate over the convexity of the brain as well as over the spinal cord.

We were correct as to the meningitis but incorrect as to the cause. Streptococcus meningitis is not usual even in the course of septicemia.

The next case is reported by Dr. G. S. Sherman of the Interne Staff:

CASE 3. John Wieprzyk, a white man, 27 years of age, married, a crane operator, entered the Milwaukee county hospital March 3rd, 1920, on a stretcher, complaining of pain in the elbow and shoulder joints of both sides, shortness of breath, pain beneath the sternum and difficulty in lying on his back or right side or in sitting up. His family history is negative, except that his father has a long standing diarrhea, and he has one child dead at three months of unknown cause. The past history of the patient is also negative except for four previous attacks of "rheumatism" similar to the present one. The first was at the age of fourteen when he was sick about one year with swollen, but not red joints and marked edema of lower extremities. Ever since this attack patient has noticed that his heart beats faster on exertion than it did before. The three succeeding attacks were not as severe, lasting only two or three weeks, and with no swelling of his extremities. Between these attacks he felt perfectly well. The present illness began about January 21st, 1920, or about six weeks previous to entrance into

hospital, with pain in the knees, later in elbows, then in the back and shoulders. The substernal pain has been present for a week or two. The burning on urination has been present for about three weeks.

Examination of the patient revealed a young man of 27 years of age, well nourished and developed, apparently in much distress, dyspnoeic, perspiring profusely, with a pasty complexion and lying on his right side. His temperature was 99° and has varied from subnormal up to 102° since, with sharp up and down curves.

The head and neck were negative, except for marked pulsation of vessels of neck. The chest showed some limitation of motion of left side with flatness anteriorly up to the apex, and nearly to apex posteriorly, also Grocco's sign, marked suppression of breath sounds and marked egophony over practically whole left back.

The apex beat was faintly visible in the sixth interspace 20 cm. from midsternal line. The right border at the level of the fourth rib was 5 cm. from the midsternal line. A friction rub was heard to left of sternum low down. The liver dullness in the midsternal line was 7.5 cm. below the tip of the ensiform. The right lobe of the liver could not be palpated. The heart tones at the apex were not clear and sharp, but not distant. No murmurs were heard at the apex or base. Pulse was fairly good quality at the radial and also regular. The rate was 128 and has varied since from 96 to 130. The blood pressure was 170 systolic and 60 diastolic with a pulse pressure of 110. X-ray of the chest showed haziness of the entire left side with the heart pushed slightly to the right. Aspiration of the pericardium at the costo-xyphoid angle showed no fluid. Aspiration of the pleural cavity showed a straw-colored fluid. 1,000 c. c., 500 c. c. and 300 c. c. of this fluid were aspirated on three successive days. The laboratory report on this fluid showed a specific gravity of 1.022 with 3.4 per cent albumin, neutrophilic leucocytes, and no bacteria.

The abdomen showed nothing except as noted about the liver. No edema of feet. The elbows were somewhat painful on movement of the arms, but there was no edema, swelling or redness about the joints. There was very definite atrophy of the dorsal interossei of both hands and the terminal phalanges of all fingers were beginning to hyper-extend.

The urine upon entrance had a specific gravity of 1.036, reddish brown in color, acid reaction, no sugar, a small amount of albumin but no casts or cellular elements. Eleven days later the specific gravity was 1.030, contained no albumin and has been free from it since. A kidney function test with phenolsulphonphthalein showed an excretion of 35 per cent in one hour and 65 per cent in two hours.

The blood showed a leucocytosis of 21,000 on the fourth of March and 12,000 and 15,000 on the sixteenth and twenty-second, respectively, with a differential count of 70 per cent neutrophiles, 11 per cent small lymphocytes, 10 per cent large mononuclear lymphocytes, 5 per cent transitionals and 2 per cent eosinophiles. There were 4,600,000 red blood corpuscles per cu. mm. and a hemoglobin of 80 per cent. The Wassermann reaction was negative to both a Noguchi and a re-enforced Cholesterinized antigen. A culture of the blood was negative after twelve days.

March 9, 10 c. c. Tr. digitalis was given in one dose. Patient vomited one hour later. 5 c. c. more given immediately. No effect on pulse rate.

March 12th examination after the removal of 1,800 c. c. fluid from left chest showed an apex beat with a tremendous push 15 cm. from the midsternal line. There are pleuro-pericardial sounds along the whole left border of the heart. At the apex the first sound is muffled in character with a suggestive low pitched distant rumble. Within the apex toward the center is a to and fro murmur with its maximum intensity at the third left costal cartilage. There is an occasional dropped beat and a tendency to gallop rhythm. Pulse 120, markedly collapsing and a capillary pulse in the finger nails.

March 15th—Dullness over left side posteriorly, crepitant rales, egophony, decreased breath sounds, 25 c. c. fluid aspirated.

March 17th—6 c. c. Tr. digitalis given. Four hours later 6 c. c. more given. Four hours from time first dose given pulse dropped from 112 to 84 and 24 hours later to 72 after which it gradually rose. Patient felt no nausea and was much more comfortable, without dyspnoea. He had an extra systole and a coupled pulse after first 6 c. c. digitalis.

March 26th—Only able to aspirate 5 c. c. of fluid from chest.

March 31st—Patient very much better than on entrance. Pulse regular. No dyspnoea. Sleeps well. No pain in joints.

At present writing (April 15th) he is rapidly convalescing. He has permanent enlargement of heart with aortic regurgitation.

He was discharged, greatly improved, working, May 18, 1920.

DISCUSSION.

Usually cases of primary sero-fibrinous pleurisy are tuberculous. Once in a while the pleurisy occurs in the course of a severe infection with the rheumatic virus and, as in this case, no organisms were cultured from the fluid. Further the cells in the fluid were neutrophiles, not mononuclears.

This lad was so dyspnoeic, his pulse was so rapid, he was in such evident distress and the area of cardiac dullness was so large that it was thought he had pericardial effusion. The history notes show, too, that the liver was depressed, an important sign of fluid in the pericardial sac to which Williamson has recently called attention. However, puncture reached the right ventricle but did not withdraw any fluid.

Note that he was given 10 c.c. Tr. digitalis at one dose. This is not a printer's error. I am a convert to the large doses. Those interested will find references in articles by Eggleston and by Robinson. The former in Archives Internal Medicine, XVI, 1915, p. 1; the latter in American Journal Medical Sciences, January, 1920. Eggleston also has a brief note on his method of giving digitalis in the Journal American Medical Association, March 13, 1920, p. 735.

This patient had what we believe was a much dilated heart. As soon as the heart recovered its tone the typical aortic regurgitation was easily demonstrable. The case interested us particularly on account of the pleurisy with effusion which was rheumatic, not tuberculous.

REPORT OF CASE OF RETENTION OF URINE DUE TO PROSTATIC ENLARGEMENT AND FIBROID TUMOR WITHIN THE BLADDER.

BY FRANK F. RUSSELL, M. D.,

WEYAUWEGA.

I am taking the liberty of reporting this case from the interesting aspect of urinary retention due to a tumor within the urinary bladder.

Patient was a man 72 years old with acute retention that could not be relieved by catheterization, so I did a superpubic trocar puncture, following which for a week patient could urinate fairly well. Another retention occurred and another puncture was done. On the same day, February 22, 1920, the patient was taken to the hospital and, under apothesine anesthesia, drainage of the bladder was instituted. At this time I could feel the tumor in the bladder and thought it the enlarged median lobe of prostate. Six days later, February 28, 1920, under ether, I removed prostate, and the tumor that was attached to the base of the bladder. The tumor was a fibroid the size of a large hen's egg.

At this date, April 1st, 1920, patient is up and feeling good, the abdominal wound is healed and urine is discharged the natural way without any distress.

PREVENTIVE MEDICINE

Edited by
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"HEMOLYTIC STREPTOCOCCUS IN THE MILWAUKEE TAP WATER."

BY F. E. CHURCH, M. D.,

BACTERIOLOGIST, LABORATORY, MILWAUKEE HEALTH DEPARTMENT.

The records of the laboratory show that in 1916 a hemolytic streptococcus was isolated from the Milwaukee water.

In the daily examination of the tap water a streptococcus is frequently found, especially after a storm or a sudden change in the direction of the wind.

Owing to the great interest created during the influenza epidemic in the streptococcus hemolyticus, it was thought wise to determine the type and virulence of this organism. The technical procedure was as follows:

The water was allowed to flow from the laboratory tap for 20 minutes and a sample taken in a sterile flask for examination. From this specimen 0.1 c.c., 1 c.c., and 10 c.c. were placed in tubes of lactose fermentation broth. The water was also plated on plain agar and lactose-litmus media.

After 48 hours incubation at 37°C. the following results were tabulated. The wind on this particular day was southwest.

Number of bacteria per c.c. 62, fermentation 0.1 c.c. 0/5 c.c., 1 c.c. 0/5, 10 c.c. 4/5.

A. Smears from lactose fermentation broth showed the presence of B. Coli gram negative, a diplococci and staphylococcus gram positive.

B. Smears from plate colonies.

(1) Branching forms higher bacteria gram +
(2) Staphylococcus Aureus gram +
(3) Streptococcus brevis gram +
(4) B. Subtilis with and without spore gram +
(5) B. Coli gram —.

C. Subcultures were made from the streptococcus colonies on calcium broth, blood agar plates and blood serum media, and incubated for 24 hours at 37°C. At the end of this period a small halo of hemolysis was noted about the colonies on blood agar plates, suggestive of streptococcus hemolyticus. In order to confirm these findings, the following test was made.

To 0.5 c.c. of the broth culture was mixed with 0.5 c.c. of a 5% suspension of sheep's corpuscles in normal saline. This was placed in a water bath for two hours at 37°C. Results: Complete hemolysis.

ANIMAL INOCULATION FOR VIRULENCE.

Two medium sized, white, male rabbits were used for the purpose. Rabbit No. 1 received intravenously 3 c.c. of a 24-hour broth culture, while rabbit No. 2 was given 4 c.c.

Twenty-four to forty-eight hours after the injection, both rabbits showed signs of sluggishness and temperature. They also refused to eat and rabbit No. 2's eyes and nose were watering. About 8 o'clock on the third day, rabbit No. 2 died.

AUTOPSY.

On opening the abdomen, the spleen and liver were somewhat congested and enlarged. On section blood exuded. The kidneys were also congested. Capsules stripped easily. There was very little exudate present in the peritoneal cavity. The intestines and stomach were normal in appearance. The bladder was distended and filled with urine.

The contents of the chest were in normal relation. Both lungs showed slight congestion and blood exuded on section. The heart was apparently normal in position, size, etc.

Cultures from the heart's blood on calcium broth gave a pure culture of streptococcus brevis.

Sections of the lung, spleen, liver and kidneys showed an infiltration of round cells and polys.

The symptoms of rabbit No. 1 were milder than those of rabbit No. 2, and after three or four days entirely disappeared. Rabbit appeared normal for about a week, then it was noticed that he rested a good deal of the time on his hind legs and was inclined to drag himself about with some difficulty.

Upon examination, a swelling the size of a hazel nut was noted on the left hind leg near the middle joint, rather hard in consistency, red in color, and tender on palpation. Three days later a similar swelling appeared on the corresponding joint of the right leg.

The symptoms became more exaggerated and the animal seemed to lose the use of his hind legs entirely. Rabbit was chloroformed and showed the following post-mortem findings:

The abscess of the left joint was opened and it was found to extend down into the bone. A thick organized pus exuded. Direct smears showed streptococcus brevis, diplococci, numerous pus cells and degenerated bone cells.

The right showed the same findings with the exception that the bone was not so extensively involved. Subcultures from both lesions showed streptococcus brevis.

On opening the abdomen and chest, there were numerous small abscesses of the liver, lungs, spleen, and kidneys. Direct smears from these abscesses and sub-cultures showed the same organisms.

SUMMARY.

(1) The streptococcus isolated from the tap water was a virulent strain of streptococcus hemolyticus.

(2) It was pathogenic to animals, rabbit No. 2 having died of streptococcus septecemia while rabbit No. 1 developed a typical suppurative arthritis followed by caries of the knee joint.

(3) The hemolytic streptococcus found in the Milwaukee tap water was similar to the one found in a patient suffering from influenza.

(4) In conclusion the author wishes to state that the type of streptococcus most frequently found in the tap water was of the non-hemolytic variety.

The occurrence of pathogenic organism has depended largely on the condition of the weather, direction of the wind and the chlorination.

MALNUTRITION OF SCHOOL CHILDREN.

BY JOHN P. KOEHLER, M. D.,
DEPUTY COMMISSIONER OF HEALTH, MILWAUKEE.

While the size of a child for a certain age may vary a great deal depending somewhat on its parents and nationality, nevertheless its weight should be somewhere near the average weight for children of that height and age, regardless of all other influences. A child should be symmetrical and well nourished whether it is small or tall for its age. We all realize that weight is related to health during infancy. Mothers will purchase scales to weigh the babies weekly because they realize that its weight is a sure index of the baby's health. If the baby fails to gain or even loses the family physician is consulted to discover the reason. Older people do not hesitate to weigh themselves at every opportunity offered, which accounts for the many scales placed in various public places. When adults lose weight too rapidly they decide to consult a physician. A farmer

watches his cattle and whenever he finds an animal that is gradually getting thinner, he realizes that there is something wrong with that animal and calls a veterinary. In the army, all horses were inspected almost daily by veterinary inspectors to discover animals that did not look normal, especially with respect to weight.

If it is a good thing to watch the weight of infants, adults and animals because we believe weight is related to health, why not give more attention to the undernourished children in our schools? In the past, we have examined school children for defective teeth, tonsils, vision and other defects, but tagged them O. K. if nothing was found excepting malnutrition. We see so many badly nourished children in school that we are inclined to believe that undernourishment in children is almost a normal condition, and cannot be remedied by us, but may eventually be taken care of by nature. There are many defects in children that time and nature might improve. Nevertheless, we believe in helping nature wherever possible and this should also be the case in malnutrition.

Whether malnutrition is a disease or is only a symptom of disease should not change our attitude, because in either case it needs our attention. Children suffering from malnutrition, as a rule, are the children who have one or more serious defects. If children in school were all weighed and classified as normal and undernourished children, we would find that nearly all of the children that need any special medical or surgical attention would be in the undernourished class. When we stop to consider that nearly all children, when first born, or during the first year of life are normal or over weight we cannot help but feel that there is something wrong when children after the first year or two gradually become more poorly nourished. The practice has been to blame teething in younger children and rapid growth in older children. While it is true that a child may lose weight temporarily during teething, yet there is no reason why it should not regain its normal weight after it has passed its teething period. The fact that a child becomes taller is no reason why it should not develop symmetrically. Most animals, when they are young, are undernourished, but as they grow larger, become better nourished, and children, if well and properly cared for, should remain well nourished although growing taller.

When we study the causes of malnutrition in children we will find that about 10 per cent of it is due to poverty. It seems incredible that in this land of plenty, from whence we are continually sending food to children in other countries, that we should have children suffering, their health undermined, and their future uncertain, because they are unfortunate enough to have parents who cannot provide them with sufficient food. There are many children whose parents are financially able to buy food but who do not realize what kind of food to give children or how to prepare it for children. Nearly all parents will readily agree that children under one year cannot eat the same food as adults, but seem to feel that after one or two years a child's stomach can suddenly adapt itself to foods intended for grown-ups. A child's stomach is just as incapable of doing the work of an adult's stomach, as the child itself is unable to do the work of an adult. Until a child reaches puberty special food should be provided for the same. More attention should also be given to the habits of children. All bad health habits whether they be in eating, sleeping or resting, are detrimental to the child's nutrition. Children are spending too many evenings in moving picture theaters where they are deprived of fresh air and refreshing sleep. There is no question but what school work itself is responsible for loss of weight in some cases. Many children who are of a nervous disposition are under a continual nervous tension while attending school, and cannot relax until the summer vacation arrives. Competition even in the grade schools is so keen that children many times work and worry more than they should. But even in the better homes, where children have the best of food and attention and where the best habits of hygiene and sanitation are developed, we find malnutrition, due to the fact that some disease or physical defect is the underlying cause. Some children are undernourished, no doubt, due to the fact that they have inherited from their parents, some taint or tendency of syphilis, tuberculosis or other serious disease. Where either parent was tubercular, it is the common thing to find children anaemic and undernourished even though not suffering from an acute tuberculosis. However there are many of these children whose parents show no sign of tuberculosis who are suffering from an acute tubercular infection, which may become fatal if not discovered and treated early. Many of these children, undoubtedly have only a tubercular in-

fection of the cervical or bronchial glands, by which process nature is attempting to develop immunity against active tuberculosis. A little more fresh air, or a little better food or a little more rest at this time may be the deciding factor in the child's fight against active tuberculosis.

Children absorbing pus from decayed teeth and infected tonsils are usually undernourished, undoubtedly due to the fact that this continual absorption of pus interferes with the appetite, digestion and assimilation. In many instances the absorption of pus stimulates the thyroid gland to greater activity in order to eliminate this poison, with the result that the increased activity of the thyroid gland uses up more energy than the food consumed by the child is able to supply, with a consequent loss of weight. Many of these acute or sub-acute infections will become chronic if the child's resisting power is not increased by bringing it to normal weight. Some of these undernourished children are suffering from a chronic gastro-intestinal trouble caused by improper feeding in the past, and improper treatment at the present. It will be impossible to get these children to ingest and digest a sufficient amount of food to make them gain until the gastro-intestinal trouble, whatever its cause, is remedied. Where a child is under weight due to a previous serious illness, it is as a rule not so difficult to make it gain when given the proper attention. However, if permitted to remain too long underweight before anything is done, it will be much more difficult to get results. Our experience has convinced us that the more and the longer a child is underweight, the more difficult it will be to make that child gain weight. It seems to be a case of "Him that hath shall be given, and him that hath not, from him shall be taken." The people who take the attitude that these undernourished children, if let alone, will eventually of their own accord reach their normal weight, are working in a delusion, because malnutrition, like other defects and diseases can be cured more easily and quickly when treated early. Where we have cases of constitutional wasting diseases such as diabetes, nephritis and syphilis it is almost impossible to bring these children to normal weight.

When we know that there are many children suffering from malnutrition which not only interferes with their health but also with their school work, (for undernourished children as a rule not only do poorer work while in school than the normal children, but are also inclined to drop out of school earlier than the well children), it is time that something were done to fight malnutrition. There is no reason why there should not be a scale in every school and why all children should not be weighed at least once a month. All children who are found to be greatly below weight or not gaining, or even losing from month to month, should be considered sick children who require special attention. They should all have a thorough physical examination to determine, if possible, the cause of their abnormal weight record. All defects that may be responsible for their underweight should be corrected immediately. The homes of these children should be investigated and the causative factors of malnutrition there remedied. If it is necessary to get a new home for these children before they will have a chance to gain in weight, the entire family should be moved into a new home. If it is necessary to put in material relief, it should be so done, and many times, the employer if he were informed that the children of his employes were suffering from starvation because he was not paying living wages, I am certain would feel inclined to pay better wages or go out of business. It would not be a great expense for schools to furnish their undernourished children with a glass of milk and two or three graham crackers each day at school. This additional food would not only help the children who, on account of poverty, are unable to obtain enough food at home but would also help the children who do not get the proper food at home, or who refuse to eat the food that is best for them at home. Many children who will not touch milk at home will drink it in school where they are carried away with the enthusiasm of a crowd. While one glass of milk and two crackers do not appear to have much food value, yet when children receive this daily in addition to all other food that they receive at home, it can readily be seen that if insufficient food is the underlying cause of malnutrition, this extra food in school ought to give results. Our experience has taught us that it does give results. In schools where this has been done, children have gained over twice as much as children in schools where it has not been done.

These children should not only be given additional food but should also be given other special attention while in school. Wherever possible,

they should all be put into one fresh air room where they may have short periods for study and exercise and long periods of rest. The time has come when schools should not merely exist to teach children, but their prime purpose should be to prepare children for life's battles. This cannot be done unless more attention is given to the health of the child than has been given in the past. We not only want educated citizens, but we want healthy and strong citizens. The time has come when our educational program in all schools must be made more practical and we cannot make it practical unless we give more attention to the essentials of life, namely air, food, sleep, rest and habits. When a program is introduced into our schools, embodying the essentials of health and life, we will no longer have 12,000 children in the city of Milwaukee suffering from malnutrition.

(No. 4, S.)

CHAPTER 17, SPECIAL SESSION, 1920.

AN ACT to create sections 1417a—1, 1417a—2, 1417-a—3, 1417a—4, 1417a—5, 1417a—6, 1417a—7, 1417a—8, 1417a—9, 1417a—10, 1417a—11, 46.115 and subsection (7) of section 20.40 of the statutes, relating to the treatment of county and state patients in the State of Wisconsin General Hospital, providing for payment therefor by the several counties, and making appropriations.

The people of the State of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. There are added to the statutes twelve new sections and to section 20.40 a new subsection, to be numbered and to read:

Section 1417a—1. The State of Wisconsin General Hospital at Madison is hereby designated as the proper place of treatment for persons who are legal residents of this state, and who are afflicted with any disease, malady, deformity or ailment, which can probably be remedied, or which can be advantageously treated by proper medical or surgical care, in all cases where such person, or in the case of a minor, the parent, guardian, trustee or other person having lawful custody of his person, as the case may be, is financially unable to provide such care and treatment.

Section 1417a—2. Whenever the existence of a case described in section 1417a—1 shall come to the notice of the sheriff, any county supervisor, public official, town clerk, public health officer, public health nurse, poor commissioner, policeman, physician, or surgeon, it shall be his duty to, and any teacher, priest or minister may, file with the county judge of the county of the legal residence of such person, an application for the treatment of such person at the State of Wisconsin General Hospital.

Section 1417a—3. Such application shall be in such form as the county judge shall direct, and shall contain a full statement of the financial situation of the person sought to be treated and a general statement of his physical condition, and shall be verified. Upon the filing of such application, the county judge shall make investigation in such manner as he shall deem advisable, and it shall be the duty of the supervisor for the town, village or ward of the residence of the person sought to be treated to supply to the court, on request thereof, all information within his knowledge relative to the financial situation of the person sought to be treated; and if, after investigation, said judge shall be satisfied that the person on whose behalf the application is made is not financially able to provide himself with such treatment, or, in the case of a minor, that his parents, guardian or trustee, in representative capacity, or the person having legal custody over him or legally responsible for his support and maintenance, is not financially able to provide such treatment, then said judge shall appoint a physician of said county whose duty it shall be personally to make an examination of the person on whose behalf said application for treatment has been filed. Said physician shall thereupon make and file with the county court a verified report in writing, setting forth the nature and history of the case, and such other information as will be likely to aid in the medical or surgical treatment of the disease, malady, deformity or ailment affecting said person, and shall also state in said report whether or not, in his opinion, the condition of such person can probably be remedied, or should be treated, at a hospital. The report of such physician shall be made within such time as the court may direct, and upon blanks to be furnished for that purpose. Said report shall include any information within the knowledge of said physician relative to the financial situation of the person proposed to be treated.

Section 1417a—4. If, upon the filing of said report, the court shall be satisfied that the case is one which should be treated at the State of Wisconsin General Hospital, and that the person to be treated, or his parent, guardian, trustee or other person having legal custody of his person in case of a minor, is not financially able to provide himself with proper treatment, he shall enter an order finding such facts. In case the court is not so satisfied, he may take additional testimony, or make such further investigation as to him shall seem proper. The court may reject any application not found meritorious. Upon the entry of the order of the court approving said application, he shall communicate with the superintendent of the State of Wisconsin General Hospital and ascertain whether or not the applicant can be received as a patient. If the State of Wisconsin General Hospital can receive such applicant, the court shall thereupon certify his approval of such application to said hospital, and to the chairman of the county board.

Section 1417a—5. Upon the approval of said application, if the patient is unable to travel alone, the court may appoint a suitable officer or person to take him to said hospital, and such person shall receive his actual and necessary expenses, and, if not a salaried

officer of the state or any subdivision thereof, shall receive in addition a per diem of three dollars per day for the time actually and necessarily consumed in transporting said patient to said hospital and returning. Such per diem and expenses shall be paid by the county of the residence of said patient, and it shall be the duty of the county board of each county to provide for such payment. The physician appointed to make said examination shall receive five dollars for making said examination and his actual and necessary expenses, which shall also be paid by the county of the residence of said patient, and it shall be the duty of the county board of each county to provide for such payment.

Section 1417a—6. The State of Wisconsin General Hospital shall treat patients admitted on certificate of the county court of any county at rates based on actual cost as determined by the board of regents of the University. Any legal resident of the state, upon a proper showing to the board of regents of the university, that he is unable to pay the full charges of said hospital for care, may be received upon paying the same rate as charged against the county for county patients. It shall be the duty of the board of regents to investigate applications made for such treatment under this section and, if satisfied of the truth of the allegations made, and of the necessity for treatment, shall admit such patient whenever there is room in said hospital.

Section 1417a—7. No compensation shall be charged or received by any office of the State of Wisconsin General Hospital, or by any physician or surgeon or nurse in its employment, who shall treat or care for any patients, other than the compensation provided for them by the board of regents of the university.

Section 1417a—8. The board of regents of the university shall file a verified monthly report with the secretary of state, containing an itemized statement of the expense charged against each patient received on certification of any county court, together with the name of the county from which said patient was certified, and a statement of any sum or sums paid by the patient, his guardian, trustee or parents, or by any person in his behalf. The secretary of state shall audit such monthly report, and, upon finding the same correct, he shall issue a warrant against the state treasurer for the net amount so certified. The state treasurer shall thereupon transfer such amount from the general fund to the appropriation from the university fund income provided in subsection (7) of section 20.40.

Section 1417a—9. On or before the first day of October in each year the board of regents of the university shall file with the secretary of state a statement setting forth the name of each patient cared for at the State of Wisconsin General Hospital at any time during the fiscal year ended on the thirtieth day of June next preceding, and for whose support any county is legally chargeable, either in whole or in part; the length of time for which such support is charged, and the net amount due to the state from such county for the care and maintenance of said patient. The secretary of state shall thereupon certify to each county the net amount due from it to the state for each such patient, and the net total amount due from such county for all such patients for which it is chargeable, which last amount shall be equal to one-half the sum certified by the board of regents of the university, and shall be a special charge against such county, and shall be certified, levied and collected with the general state taxes and paid into the state treasury.

Section 1417a—10. Whenever, in the opinion of the superintendent of the State of Wisconsin General Hospital, any county patient should be discharged therefrom as cured, or as no longer needing treatment, or for the reason that treatment cannot benefit his case, said superintendent shall discharge said patient. If the patient is unable to return to his place of residence alone, said superintendent shall notify the county judge of said county, who shall appoint some suitable person to bring said patient back from said hospital. Such person shall receive his actual and necessary expenses, and, if not a salaried officer of the state or any political subdivision thereof, shall receive in addition a per diem of three dollars per day for the actual time necessarily consumed. Such per diem and expenses shall be paid by the county of the residence of said patient, and it shall be the duty of the county board of each county to make proper provision therefor.

Section 1417a—11. The faculty of the medical school of the university shall prepare proper blanks containing to the physical condition of the applicant as may be necessary to be obtained by the physician examining a such questions and requiring such information relative patient under order of the county court. Such blanks shall be printed by the university, and shall be mailed to the clerk of each county court upon request. Physicians making such examination shall make a verified report to the court in duplicate on said blanks, answering all the questions therein contained, and giving such information as is therein required. One copy of said report shall be filed with the court, and the other sent to the State of Wisconsin General Hospital when said patient is admitted.

(46.115) The board of control of the State of Wisconsin shall make application to the board of regents of the university, for the admission to the State of Wisconsin General Hospital of any inmate of any state institution under the board of control, or of any person committed to or applying for admission thereto, who is afflicted with any disease, malady, deformity or ailment, which can probably be remedied, or which can be advantageously treated by proper medical or surgical care, at the State of Wisconsin General Hospital, in all cases where such person cannot receive proper care at the institution to which he has been committed or to which he has made application for admission. Said application shall be accompanied by the report of the physician of said institution or by a physician appointed by the board of control, in the same form as reports of other physicians for admission to patients to said hospital. The board of control shall pay to the regents of the university for the treatment of such patients at the

same rates charged the county for county patients, and the expense of such treatment and of transporting such patient to and from the hospital shall be paid out of the appropriation for operation of the institution from which said patient is sent. Said board may, when necessary, send an attendant with such patient and pay his traveling expenses in like manner.

(20.40) (7) From time to time, such sums as may be necessary, to meet the certifications of the secretary of state, as provided in section 1417a—8, to be added to the appropriation made by paragraph (a) of subsection (10) of section 20.41.

Section 2. This act shall take effect upon July 1, 1920.

Senate: Ayes, 26; Noes, 1.

Assembly: Ayes, 58; Noes, 19.

(No. 18, S)

CHAPTER 30, SPECIAL SESSION, 1920.

AN ACT to create section 36.31, paragraph (h) of subsection (2) of section 20.40, and subsection (10) of section 20.41 of the statutes, and to renumber and amend paragraph (j) of subsection (1) of section 20.41, relating to the State of Wisconsin General Hospital, and making appropriations.

The people of the State of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. A new section is added to the statutes to read: (36.31) There shall be established in connection with the Medical School of the University of Wisconsin at Madison a State Hospital to be known as the State of Wisconsin General Hospital.

(1) Said hospital shall be under the control and supervision of the board of regents of the university.

(2) The university infirmary and the Bradley Memorial Hospital heretofore established shall be a part of said hospital.

(3) Said hospital shall be utilized for such instruction of medical students, physicians and nurses and for such scientific research as will promote the welfare of the patients committed to its care, and assist the application of science to the alleviation of human suffering.

(4) Said hospital shall be more particularly designed for the care of persons afflicted with a malady, deformity, or ailment of a nature which can probably be remedied by hospital service and treatment and who would be unable otherwise to secure such care.

(5) Said regents shall erect at an appropriate place in said hospital a suitable tablet stating the source of the fund from which the hospital was erected and such other statements as they may deem appropriate.

Section 2. A new paragraph is added to subsection (2) of section 20.40 of the statutes to read: (20.40) (2) (h) On June 1, 1920, a sum sufficient to meet the appropriation from the university fund income made by paragraph (f) of subsection (10) of section 20.41.

Section 3. Whenever, in the opinion of the Service Recognition Board, moneys in the Service Recognition fund are no longer needed for the carrying out of the provisions of chapter 667, laws of 1919, the balance or any part thereof shall from time to time as needed be transferred to the university fund income. Whenever such moneys are transferred to the university fund income the same shall be credited to the appropriation made by subsection (10) of section 20.41 of the statutes.

Section 4. A new subsection is added to section 20.41 of the statutes to read: (20.41) (10) Whenever moneys are transferred to the university fund income from the Service Recognition Fund, there is hereby appropriated:

(c) For the construction of a hospital building including dispensary and clinic, seven hundred fifty thousand dollars.

(d) For the construction of a nurses' home, one hundred fifty thousand dollars.

(e) For equipping and furnishing a hospital building and nurses' home, four hundred fifty thousand dollars.

(f) On June 1, 1920, a sum sufficient for the purchase of a suitable site for the hospital building and nurses' home; provided, that this appropriation shall be available only upon the approval of the governor and the state board of education and as provided in paragraph (h) of subsection (2) of section 20.40.

(j) In case any savings are effected in the use of the appropriations made by paragraphs (c), (d), and (e) of this subsection, the amount or amounts not expended for the original purpose thereof may be added to any one or more of the other purposes covered by said paragraphs, and shall thereupon become a part of such appropriation.

Section 5. Paragraph (j) of subsection (1) of section 20.41 of the statutes is renumbered to be paragraph (a) of subsection (10) of said section and is amended to read: (20.41) (10) (a) All moneys collected or received by each and every person for or on account of the State of Wisconsin General Hospital University Clinic * * * for clinic, dispensary, infirmary or hospital fees, shall be paid, within one week after receipt, into the university fund income, and are appropriated therefrom as a revolving appropriation, to be used for the payment of operating expenses in connection with the State of Wisconsin General Hospital * * *.

Section 6. This act shall take effect upon passage and publication.

Senate: Ayes, 29; Noes, 1.

Assembly: Ayes, 43; Noes, 38.

Beware the much advertised "sure cure" for disease, warns the United States Public Health Service. While experimenting, the disease often gets beyond the point where it can be cured by a competent physician.

"Why don't you get an alienist to examine your son?"

"No, sir! An American doctor is good enough for me."

AS OTHERS SEE US

THE HOSPITAL.

BY DR. FRANK CRANE.

The medical profession is simply the best intelligence of the race applied to the subject of health. It is common sense addressed to physical welfare. It is fact versus hocus-pocus; truth versus fiction; experience versus fancy; noonday versus twilight. At least that is what it ought to be, strives to be. That is its ideal. It does not attain it, of course, for an ideal attained is no longer an ideal.

We criticize regular doctors, and pooh-pooh their pretensions (until we get sick) just as we cry out against legislators, governors, and all others who have public responsibilities, because that is our favorite American indoor sport. We don't mean it.

The hospital is the physician's workshop. That is all it is. It is merely a place where he can work to best advantage, as a mechanic can work better in his shop with all his tools about him, and a cook can produce better meals in her kitchen than over a campfire. A city's hospitals are the measure of the city's intelligent regard for its life.

The enemies of the hospital are selfishness, callous indifference, ignorance, and superstition. The peanut-souled citizen who is well and does not want to disturb his peace by thinking about sickness, will not assist the hospital. The fakers, frauds and other vultures that profit on the miseries of their fellows, do not help hospitals. The faddists, monomaniacs and all those who put their peculiar superstitious obsession above their reason, do not favor hospitals.

But every physician who has carefully prepared himself for his life work, who has studied what the wisest have learned before him, who has learned at the feet of the most skillful, who has sworn loyalty to truth and seeks honestly to practice his art in a way to be of the most benefit to men, every physician in fine that wants to do his best, wants a hospital, for that is the best of places in which to do it.

And an intelligent and sane community wants a hospital because it wants those who are set apart to care for its health, to do good work, the best possible work, under the best possible conditions.—The Milwaukee Journal.

THE DOCTOR.

Of all lives the life of the physician is the most self-denying. He has no time that he can call his own. His home is his office, and furnishes him no sweet retreat from irksome care. The night can never assure him unbroken rest. Sundays are often, whether he will or no, his busiest days. He has no holidays, and few and fragmentary vacations. Friendship furnishes him fewer solaces than to other men, for his friends are generally also his patients. He meets men in their morbid conditions—when they are sick and miserable; when they are well he knows them not. He can hardly make a friendly call without the hazard of having it converted, before the evening is over, into a professional one. He fights a battle in which, no matter how many victories he wins, he is sure to be defeated at last—for he is fighting death. And when the defeat, which must come sooner or later, does come, he is fortunate if unreasonable friends do not charge the defeat upon his lack of science or of care. But no man renders a more grateful service; no man comes nearer to our hearts; no man is more beloved. Other services may be as great, but none is more deeply or tenderly appreciated. He summons back from death the child, and puts him in his mother's arms; the wife, and reunites her to her husband. No fee can ever compensate for such a service. He to whom it is rendered is forever debtor to the doctor.—*The Outlook.*

PASSING OF COUNTRY DOCTORS.

A medical magazine published somewhere "up north" reports that the country doctors are "all moving to town." Everybody must know that country doctors are becoming comparatively scarce. In so far as it describes a tendency, the statement that the country doctors are "all moving to town" is probably not far from the truth, although, as one of O. R. Cohen's characters would say, "are moving" ain't "have moved."

Nobody could justly blame the country doctor for moving to town. There are few hardships in life more severe than those which make up his routine work. He has to perform his duties with inferior facilities, and is expected to produce results as favorable as though he were under no handicap. It is little short of marvelous that he succeeds so well in fulfilling those expectations.

His greatest hardships are experienced in winter time. One midnight call after another, with little if any rest during the day; long rides over the roughest roads, sometimes through boggy fields in a downpour of rain, only to find, at the end of his journey, that the patient has an aching toe; home again with his feet and hands so benumbed that he can hardly dismount his horse, and with his breath formed in icicles on his mustache; then another call before he has time to change his clothes—and so on, until sheer exhaustion alone prevents him from going farther. Such have been the experiences of thousands of country doctors in all parts of the land.

Their contribution to the welfare of mankind has been a double one. Not only have their services been indispensable to their immediate patients, but the very handicaps under which they work have led to valuable scientific discoveries. Other things being equal, the doctor who practiced in the country is more capable, more resourceful, than one whose practice has been limited to the city.—*San Antonio Light.*

TUBERCULOSIS RESEARCH FELLOWSHIP.

University of Minnesota.

To encourage study of the means for the prevention and cure of tuberculosis, the Hennepin County Tuberculosis Association of Minneapolis, Minn., announces that it has set aside a fund for the support of a tuberculosis research fellowship in the Graduate School of the University of Minnesota. The candidate for the fel-

lowship must be a graduate of a Class A medical college. He will be expected to devote himself to research in some problem concerned with the causes, prevention, or cure of tuberculosis. No teaching or other service will be required. The fellowship yields $750 the first year and progressively increasing amounts to be appropriated for the second and third years as conditions warrant. Inquiries and requests for application blanks should be addressed to the Dean of the Graduate College, University of Minnesota, Minneapolis, Minn.

EXTENDED NURSING SERVICE BY THE VISITING NURSE ASSOCIATION OF MILWAUKEE.

Many years ago Florence Nightingale set the goal for visiting nurses in these words: "Nurse the home."

Extended nursing service: The association has now established a confinement service whereby the nurse can be present at the time of confinement and minor operations within the city limits; charges for this service will be five dollars, if it does not exceed twenty-four hours, subsequent visits at the regular rate, or according to the financial circumstances of the family.

Prenatal visits are made to expectant mothers, advising the mother how to prepare herself for her baby to come. Previous arrangements for this service are desired; these can be made at the Main Office, 807 M. & M. Bank Bldg., Grand 3969.

The association provides graduate, registered nurses, whose duty it is to give nursing care to the sick in their homes, on the visit basis, and to instruct the families in the simple rules of hygiene and nursing, endeavoring to make health more possible in each home.

The cost of a nurse's visit is 75 cents for the first hour, and 50 cents for the second hour or part thereof. The nurses are expected to collect as large a part of this fee as the patient can afford. The same service is given to those who are not able to pay anything. The nurse is sent in response to every new call, but care is continued only when a doctor is in attendance. Contagious cases are not cared for.

Industrial Nursing: Seven of our large industries have found it to their advantage as well as of the greatest service to their employes to engage an industrial nurse from the Association to supervise and safeguard the health of those working within their factories, both while at work and, when necessary, in their homes. The Visiting Nurse Association of Milwaukee is prepared to assist in the organization and supervision of such work, putting at the disposal of employers the knowledge and standards gained through its years of experience.

QUESTIONS AS TO SHAVING OR WEARING A BEARD.

Dear Doctor:

In my medical course, I remember hearing a European specialist say in regard to shaving: "Gentlemen, if you interfere with nature you pay for it." But I am unable to find any scientific investigation of the question. I am seeking, therefore, facts and opinions from physicians. Will you kindly answer, *as soon as possible*, the question below? I may refer to you by name, but only with your permission. (Kindly let me know.)

1. To what extent are the beard and mustache a protection to the face, nose and throat, from the incidents of disease in these organs.
2. Does the habit of shaving increase the chances of neuralgic and other troubles of the face.
3. Or, do you believe the question of shaving, or wearing a beard, from the medical point of view, is not of sufficient importance to merit serious study?

Trusting you will write as fully as you can, and mention any pertinent facts or opinions not covered by the questions, I am,

Very sincerely,
(Signed) ARTHUR MACDONALD.

The Congressional,
100 East Capitol Street,
Washington, D. C.
June, 1920.

YOUR LIBERTY BOND.

The United States government borrowed money from you to finance the war. You hold the government's promise to pay you back. This promise is called a Liberty Bond or Victory Note. On this bond is stated the conditions under which the government borrowed the money from you.

For instance: If you hold a bond of the Third Liberty Loan, it states that on April 15th and October 15th of each year until maturity, you will receive interest on the amount you paid for the bond. Other issues bear other rates of interest and other maturity dates, all of which are clearly stated on the bond.

Now, if you keep your bond until the date when the government pays you in full for it, you do not need to worry if, in the meantime, the price is low one day or high the next. You and Uncle Sam are living up to your agreement with each other, and neither will lose by it.

On the other hand, if you sell your Liberty Bond now, you will find that the man you sell it to will not give you a dollar for every dollar you paid for it. The price has been brought down because so many people are offering to sell their bonds. If the market is flooded with tomatoes, you can buy them cheap, but if everyone is clamoring for tomatoes and there are few to be had, the price goes up. The same is true of Liberty Bonds. Short-sighted people are dumping them on the market, and wise ones are buying them.

The best advice that can be given to the owner of a Liberty Bond is this: Hold the bond you bought during the war; it is as safe and sound as the United States government itself.

Buy as many more at the present low rate as you can afford. If you hold them to maturity, you are bound to make the difference between what they sell at now and their face value. You will also receive good interest on your investment.

Hold on to your Liberty Bonds and buy more.

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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Sheboygan	T. Gunther, Sheboygan	Harry Heiden, Sheboygan.
St. Croix	W. H. Banks, Hudson	O. H. Epley, New Richmond.
Trempealeau-Jackson-Buffalo	E. A MacCornack, Whitehall	C. F. Peterson, Independence.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	F. W. Aplin, Waukesha	S. B. Ackley, Oconomowoc.
Waupaca	E. W. Jones, Weyauwega	H. A. Jefferson, Clintonville.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DANE COUNTY.

The Dane County Medical Society held a joint meeting of their society with those of Rock, Dodge and Jefferson Counties, May 18. A dinner was served at the Y. M. C. A., Madison, at 6:30, followed by an address by Dr. Hugh Cabot, professor of surgery at the University of Michigan, on "Infections of the Kidney." About 100 were in attendance. At the close of the meeting, Dr. C. S. Sheldon made appropriate remarks and led the singing. Everyone reports that the meeting was one to be long remembered.

H. P. Greeley, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

A meeting of the Milwaukee Medical Society was held in the Colby-Abbot Building, Milwaukee, May 25, at 8 P. M. The following interesting scientific program was given: "Physiological Standardization of Digitalis," by A. G. Margot, Ph. G., pathologist of the Milwaukee County Hospital; "The Modern Conception of Heart Failure," by Dr. A. J. Patek, and "New Method in Digitalis Administration," by Dr. L. M. Warfield.

Because of frequent requests for a clinical meeting, the last meeting of the Milwaukee Medical Society, held June 8, was given over to the presentation of clinical cases. The cases discussed were as follows: "Squamous Cell Carcinoma of the Uvula," Dr. W. E. Grove; "Carcinoma of the Base of the Tongue," Dr. H. T. Kristjanson; "Clinical Notes on Radium Therapy," Dr. J. P. McMahon; "Carcinoma of Stomach with Occlusion Presenting Vague Clinical Evidence of Obstruction," Dr. Daniel Hopkinson; "Premature Separation of the Normally Implanted Placenta," Dr. C. H. Davis, and "An Unusual Case of Encephalitis Lethargica, with Pathological Specimens," Dr. L. M. Warfield.

NINTH COUNCILOR DISTRICT.

About fifty physicians of central Wisconsin attended the annual meeting of the Ninth Councilor District Medical Society held in Stevens Point, May 13th. The program started at 3 o'clock in the afternoon at the club-rooms of the library with a clinic on diseases of the heart, conducted by Dr. A. A. Goldsmith of Chicago. Dinner was served at 6 o'clock, followed by the evening program as follows: "Headache, From the Standpoint of the Eye, Ear, Nose and Throat Specialist," Dr. H. T. Schlegel, Wausau; "From the Standpoint of the General Practitioner," Dr. F. H. Frey, Wausau; "Clinical Value of Blood Chemistry," Dr. H. H. Milbee, Marshfield; "Cardiac Irregularities," Dr. A. A. Goldsmith, Chicago, and "Unlocalized Intracranial Injuries and Their Treatment," by Dr. C. A. Evans, Milwaukee.

KENOSHA COUNTY

The regular monthly meeting of the Kenosha County Medical Society was held at the Elks Home, Wednesday evening, June 2, 1920. Dr. L. M. Warfield of Milwaukee gave a very interesting talk on "Digitalis Preparations in Heart Disease." The speaker discussed especially the quantity of various preparations of the drug necessary to produce the physiological effect. An interesting, informal discussion of the paper followed.

Doctor Windesheim reported that the Public Clinic was to be opened at the new building during the second week of June. He outlined the scope of the work and explained the modus operandi of the institution. The Social Disease Clinic is already in operation.

H. M. Ripley, M. D., *Secretary.*

DODGE-FOND DU LAC COUNTY

The June meeting of the Dodge County Medical Society was held at the Hospital for the Criminal Insane, Waupun, at the invitation of Doctor J. F. Brown, superintendent, the members of the Fond du Lac Society being their guests. After an inspection of the hospital and a clinic conducted by Doctor Adin Sherman of the Winnebago County Hospital, a delicious dinner was served.

TREMPEALEAU-JACKSON-BUFFALO COUNTY

The Trempealeau J. B. County Medical Society held its first meeting of 1920 at Independence, Tuesday afternoon, June 15. The meeting was addressed by Dr. Robert Oleson of Madison on "Health by Mail"; Dr. Henika of Madison on "Control of Venereal Diseases in Wisconsin"; and Dr. Gudex of Eau Claire on "Reports of Dangerous Infectious Diseases." These addresses were followed by a lively discussion in which all the doctors present took part. It was decided that three more meetings will be held this summer, the next one to be a boat trip on the Mississippi River. At 6:30, the meeting was adjourned to the Independence Hotel where the local physicians entertained the visitors at dinner.

C. F. Peterson, M. D., *Secretary.*

NEWS ITEMS AND PERSONALS.

Dr. A. C. Dana, Fond du Lac, was elected to the position of city physician and health officer by the city council, his term to expire May 1, 1921.

The Methodist Hospital Association of Madison, which for several years has been seeking a site in Madison for a hospital to cost $1,000,000 has bought the St. Regina Convent property for $65,000.

Beloit recently held a clinic for nervous diseases at the city health offices, under the direction of Dr. A. Sautoff of Madison. The purpose of same is to make it possible for the patient to be cured at home with the assistance and cooperation of the city health officer.

Dr. N. J. Malloy, who recently resigned as health officer of Fond du Lac, has removed to Northville, Michigan, where he will resume his general practice.

Fifteen nurses, the largest class that has ever left the institution, were graduated from Luther Hospital, Eau Claire, May 25th.

The 56th annual convention of the Homeopathic Medical Society of Wisconsin was held in Appleton, May 13 and 14.

Dr. M. J. Colton of the United States Public Health service was recently in Milwaukee on a tour of inspection. A program for the prevention of social diseases has been outlined by the federal medical authorities and 710 American cities of more than 10,000 population will be graded according to what is done by them in carrying out this program.

The Mercy Hospital, Janesville, will float a loan of $43,000. A new addition to the building will be built, at a cost of $70,000.

Dr. E. Albers, who practiced medicine in Thiensville for a number of years, has accepted a position as assistant medical examiner for the Illinois Life Insurance Company. He will make his headquarters in Chicago.

Dr. F. M. Harris, formerly of Fond du Lac, and who has practiced in Trempealeau since his return from the service, has removed to North Fond du Lac and opened offices there.

Seventeen nurses were graduated from the Mount Sinai Hospital training school, Milwaukee, May 27.

An addition which will practically double the capacity of the Theda Clark Hospital, Neenah, is being considered by the board of directors.

Dr. Walter E. Dandy, associate professor of surgery, Johns Hopkins University, visited the Resthaven Hospital, Waukesha, recently and gave a demonstration to the hospital staff.

Dr. B. F. Krueger of Cudahy has left for Boston to take up a two months' advanced course at the Harvard School of Medicine. He will specialize on throat and ear troubles.

The degree of graduate nurse was conferred on nineteen young women by the Milwaukee County Hospital training school for nurses, June first. Dr. H. Reineking, president, presented the diplomas.

Dr. G. L. Gibbs, who has practiced medicine at Marshall for the past thirty years, has removed to Waukesha and taken up practice.

At the mid-year Sanatorium Conference held in Racine, June 11, the program of the American Sanatorium Association for grading all tuberculosis sanatoria in the country according to their equipment, management, location and medical supervision was discussed. Dr. J. W. Coon, Stevens Point, president of the Wisconsin Anti-Tuberculosis Association, presided at the meeting.

Dr. C. E. Reitzek, a member of the physicians' staff at the Resthaven Hospital, Waukesha, has received an appointment as assistant director of a large government hospital near Baltimore, Maryland, directed by the U. S. War Risk Insurance Bureau.

Dr. Nelson M. Black and Dr. V. A. Chapman of Milwaukee, dissolved their partnership on May 12, 1920. Each will continue the practice of Ophthalmology and Oto-Laryngology individually in the Wells Building, Milwaukee.

The organization of the Antigo Dental Society was perfected at a meeting of the dentists of that city, June first. The objects of organization are mutual improvement and help in science and practice of dentistry and the promotion of professional good fellowship.

On June first the Kenosha service fund committee opened a campaign to refill the city health chest, established a year ago, and expected to reach the desired goal of $45,000 before the end of the month. This amount is to be divided equally among St. Catherine's Hospital, the Service League, and the Kenosha Hospital.

Dr. Harry Sargeant, Milwaukee, and Dr. W. J. Hanley, Kenosha, have recently been cited by the War Department for their "untiring care in evacuation of the wounded under shell fire, undoubtedly saving many lives, during the Thirty-second division drive in the Argonne."

Dr. N. C. Rogers, Milwaukee, has announced that he has left the employ of the International Harvester Company as physician and surgeon and has opened offices in the Hahn Building.

Efforts are being made to organize a state mental hygiene society in Wisconsin, with prominent physicians and social workers of the state as the organizers. Dr. W. F. Lorenz, director of the psychiatric institute at Madison, has been elected chairman of the permanent organizing committee.

Dr. G. J. Hildebrand of Howards Grove has accepted a position at the Muirdale Sanatorium, Wauwatosa, and removed to that place.

Dr. and Mrs. H. Hannun, who have been spending the winter with their son, Dr. Frank Hannum of Muskegon, Michigan, have returned to their home in Bayfield. The doctor, while not fully recovered from the injury sustained in a fall several months ago, is feeling much improved.

The Clinic, recently built by Dr. J. M. Dodd, Ashland, houses a group of medical specialists whose sole aim is to give greater efficiency to the public, and will make of Ashland one of the medical centers of the Northwest. The building is a two story structure, 36 by 82 feet in size, containing offices for the various specialists, operating rooms, laboratories, X-ray equipment, rest rooms, etc. The Clinic has been incorporated with the following officers: President, Dr. J. M. Dodd; vice-president, Dr. Dell Andrus; secretary, Dr. C. J. Smiles, and treasurer, Miss E. Peterson, R. N.

Dr. H. C. Ericksen has disposed of his practice at Stanley to Dr. A. I. Haugen of Mobridge, S. D.

A new chlorine plant has been installed by the city authorities at Bayfield, following recommendations of the State Board of Health.

Dr. D. G. Hugo left Oshkosh June second for New York, where he will take a postgraduate course in diseases of the eye, ear, nose and throat. He expects to be absent from the city about two months.

Dr. F. S. Luhman has been re-elected as county physician of Manitowoc County.

Dr. K. W. Doege, Marshfield, has been elected president of the Wisconsin Surgical Association.

Appleton is to have a new hospital of 200 beds to cost about $500,000. The Franciscan Sisters pledged $200,000 of this fund, the manufacturers of the Fox River Valley, $100,000, and the people of Appleton raised in two days the remaining $200,000 necessary to erect a modern hospital building and properly equip it. The old St. Elizabeth's Hospital, which has a capacity of fifty beds, will be converted into a maternity hospital.

The authorities of the Holy Family Hospital, Manitowoc, have organized a hospital staff in order to standardize the institution. Officers elected are: President, Dr. W. G. Kemper; vice-president, Dr. C. M. Gleason; secretary-treasurer, Dr. W. A. Donohue.

Dr. E. V. Brumbaugh has been appointed as deputy health commissioner of Milwaukee to succeed Dr. J. P. Koehler, resigned.

More than 10,000 Milwaukee County school children performed twelve health tasks a day for the ten weeks prior to the close of the school year as part of the national tournament for good health in which the schools are taking part, according to Miss Aimee Zillmer, state director of the modern health crusade for the Wisconsin Anti-Tuberculosis Association.

Dr. R. C. Rodecker, Holcome, Wisconsin, was elected president of the Wisconsin Eclectic Physicians and Surgeons Association at the annual meeting of the society in Milwaukee.

Dr. G. V. I. Brown of Milwaukee has been appointed president of the Tri-State Medical Society to fill the vacancy caused by the death of Dr. W. B. Helm of Rockford, Illinois, and Dr. J. S. Evans, Madison, has been chosen vice-president in place of Dr. Brown.

To make Wisconsin's reports of communicable disease as nearly complete as possible, the state board of health will soon commission the health officers of all communities over 750 population as "collaborating epidemiologists." This will add 175 more officials of this class to the 18 now in service in the larger cities. In addition there are some 1,500 local health officers who will continue to send weekly reports giving the number of new cases occurring in their districts. The collaborating epidemiologists are required to supplement the number of cases reported by giving outstanding information calculated to enhance the value of the knowledge of communicable disease prevalence. Reports of cases are now permitted to be forwarded to the Madison office on franked cards, and all collaborating epidemiologists are "dollar a year" men in the service of the government. A letter of instructions emphasizing the importance of prompt reporting has just been sent to all health officers in the state.

People in this country are living longer, according to statistical studies made by a leading insurance company. Persons in the United States at the age of 65 have as good a chance for additional years of life as those in most of the other countries of the world. The highest expectation of life is shown for Scandinavian countries. The expectation of life in the United States at the age of 65 for men, in 1910, the last year of available figures, was a little more than 11 years, and for women approximately 12 years. Women exhibit a higher expectation of life than men.

That the proposed general hospital in connection with the university would be a wise investment for the state from the financial as well as the humanitarian standpoint, was the statement of Dr. William F. Lorenz, director of the psychiatric institute at the Mendota hospital, in an address before the Rotarians at Milwaukee, May 26. The speaker dwelt chiefly on the inadequate facilities for caring for crippled children at Sparta and the saving that would be effected in providing adequately for cases of slight mental ailments. "There are from 45 to 50 cases of crippled children at Sparta," he said, "and I dare say this number does not approximate 10 per cent of the crippled dependent children in the state that ought to be cared for. There is practically no case that cannot be cured if taken care of properly during childhood."

Dr. W. E. Grove has announced the removal of his offices from 502 Wells Building, Milwaukee, to suite 1330 Wells Building, and that Dr. J. W. Truitt will be associated with him in the practice of diseases of the eye, ear, nose and throat in the future.

An extraordinary excess of measles characterized the May reports of communicable disease filed with the state bureau of vital statistics. Of this disease, mistakenly regarded by many parents as a trifling ailment but in reality a considerable factor in child mortality, there were 5,350 cases reported from all over Wisconsin. The epidemic size of this outbreak is evident by comparison with May, 1919, when 682 cases of measles were reported in May.

The Milwaukee county dispensary is handling 1,000 patients a month, the work having grown rapidly since it was started last November and having more than doubled during the last four months, according to Dr. J. P. Koehler, former deputy city health commissioner, now in charge of the county institution. Clinics are held daily from 8 a. m. to 12 m., but if the work continues to grow it will be necessary to hold them all day.

The bureau of the census has announced birth statistics and infant mortality for the birth registration area

for 1918, crediting Wisconsin with 60,867 births in that period. The gain is shown by the following comparison: 1915, 58,014; 1916, 59,459; 1917, 59,013. The real significance of the figures lies, however, in the fact that Wisconsin had an exceptionally small ratio of infant deaths. There were only 79 deaths under 1 year per 1,000 births, a record bettered only by Utah (64), Washington (69), and Minnesota (71) in the registration area as a whole (comprising 20 states and the District of Columbia, or about 53 per cent of the total population), 101 out of every 1,000 children, born, died in that year.

A decrease of 47 inmates in county insane asylums for 1920 is shown in the monthly report of the state board of control. In institutions for the feebled minded an increase of 37, however, is noted over last year. Tubercular institutes shown an increase of 119. A decrease of 106 paroles is cited.

To further Wisconsin's program of purer water supplies, the United States public health service has detailed Assistant Sanitary Engineer Joel I. Connolly, Boston, for service with the Wisconsin state board of health. He is assisting in investigations of water supplies in this state, particularly in connection with those used by interstate carriers.

Preliminary arrangements for combating venereal diseases in Racine were made at a meeting of the health board. The first step to be taken is the establishment of a clinic. This will be followed by an educational campaign. Ordinances will be passed which will give the health officers the authority to deal with the disease.

Following a notice by Surgeon General Cumming of the United States Public Health service to secure a specialist to look after the speech defective cases at the Resthaven Hospital in Waukesha. Dr. Lawrence Kolb, medical officer in charge, has secured Dr. Blanton, University of Wisconsin, a leading authority in his line, to supervise the work of treating these patients. Dr. Blanton will visit the hospital weekly.

DEATHS.

Dr. A. E. Midgley, Whitewater, Wisconsin, committed suicide at his home May 27, after having suffered an acute nervous collapse due to three hard years of service abroad in the medical corps. Doctor Midgley was born in 1878, and graduated from the University of Illinois School of Medicine in 1904. Before going to Whitewater in 1912, he practiced for a time at Lima Center, Wisconsin. He was a member of the Walworth County, Wisconsin State, and American Medical Associations.

Dr. George Powell died at his home in La Crosse, May 17, 1920. He was born in Kentucky in 1848, graduated from the College of Physicians and Surgeons, Joplin, Missouri, in 1881, and from the College of Physicians and Surgeons at Keokuk, Iowa, in 1883. Doctor Powell was a famous scout of the western plains during the Indian uprisings in the sixties and seventies.

Mrs. Bessie Kellner, wife of Dr. V. Kellner of Maribel, died at the Manitowoc Hospital, May 17, after an illness of many weeks.

MARRIAGES

Dr. J. F. Bennett, Waterford, to Miss Florence E. Mauer, Waterford, at Milwaukee, May 30, 1920.

"POWERFUL SICK."

In the bright sunlight on a railroad station in Georgia slept a colored brother. He snored gently, with his mouth ajar and his long, moist tongue resting on his chest like a pink plush necktie. A Northener climbed off a train to stretch his legs, unscrewed the top of a capsule, and advancing on tip-toe, dusted the grains of quinine on the surface of the darkey's tongue. Presently the negro sucked his tongue back inside his mouth and instantly he arose with a start and looked about him wildly.

"Mistah," he said to the joker, "kin yo' tell me whar I kin fin' me a doctah?"

"What do you want with a doctor?"

"I'm powerful sick."

"Do you know what's the matter with you?"

"Suttin'ly I knows wut's de matteh with me—mah gall's done busted!"

Patient—"Doctor, let me know the worst."

Doctor (absent-mindedly)—"Your bill will be $200."

LAUS MEDICI.

All hail to the Doctor! The kindliest soul
You can meet on earth's circle from tropic to pole;
A friend ever ready, resourceful and bold,
He is tender to childhood, to young and to old.

From the sweetest of slumbers he starts at your call;
For your rescue and welfare will venture his all;
He halts not to question your rank or your wealth,
But is yours on the moment for succor and health.

Though he seems like an angel in anguish and woe,
His grand self-denial how little ye know!
Ye may search among thousands, yet never will find
Another more truly, unselfishly kind.

And the day is not distant when all shall behold
The Banner of Health o'er the nations unroll'd,
And the Doctor acknowledged, by tongue and by pen,
As the champion of truth and the lover of men!

—R. H. G. Osborne, Morrisville, Pa., in Bucks Co. Med. Monthly.

INFLUENZA AND TUBERCULOSIS.

Amberson and Burns supplement a previous communication on epidemic influenza among patients and employes of the Loomis Sanatorium, Loomis, New York, with a further analysis of the histories of patients who had influenza before entering the sanatorium and a record of the incidence and fatality of this disease among former patients. They also give a critical review of recent literature on the subject.

Of 1,227 traced former patients, 70 contracted influenza and 16 (22.9 per cent) died of the disease. Of 199 new patients admitted between November 1, 1918, and November 1, 1919, 42 or 21.1 per cent gave a definite history of influenza. Of these 42, 18 knew they had tuberculosis prior to their influenza, while 26 gave a history of previous symptoms that were presumably tuberculous. In 12 cases the onset of tuberculosis was definitely post-influenzal.

The authors conclude that tuberculosis does not confer an immunity to influenza, that influenza is not less severe among the tuberculous, that among their own patients the case fatality was higher than among the general population, that among a certain number of individuals influenza marks the inception of pulmonary tuberculosis, and that to ignore or deny the possibility of pulmonary tuberculosis as a sequel is to unduly defer diagnosis and early treatment. Amberson, J. Burns, Jr., and Peters, Andrew Jr.; Influenza and Tuberculosis. A supplementary Report and Critical Review. American Review of Tuberculosis, April 1920, vol. IV. No. 2.

TRIPOD METHOD OF WALKING WITH CRUTCHES.

Complete paralysis of both lower extremities is not necessarily a bar to some form of ambulatory activity according to Robert W. Lovett, Boston (Journal A. M. A., May 8, 1920). It has been found, in aiding patients with such a distribution of paralysis to walk, that if the knees are kept from flexing by simple splints, the loss of the gluteus mamimus can be compensated for by a peculiar method of using the crutches for what may be called "tripod" walking. If the crutches are placed apart and slanted well forward at their lower ends, they form the two anterior points of a tripod, while the third and posterior part of the tripod is formed by the body of the patient inclined forward at its upper part, with the feet well behind. The apex of the tripod thus comes at the shoulder level of the patient, his body and legs forming the posterior support of the tripod, and the crutches the two anterior supports. Such a position is stable because (a) the base of support is a large triangle bounded by the three points of support of the tripod, and (b) the body is stable in the over-extended position because hyperextension of the hips is checked by the "Y" ligament of Bigelow, and, with the knees stiffened by the braces, the center of gravity falls in front of the hip joints and keeps them extended and firm. A paralyzed patient with no power below the waist can stand unsupported easily in this position, provided there are no contraction deformities in hip, knee or ankle.

HOW THEY DOCTORED IN PIONEER WISCONSIN.

The life of the pioneer is often pictured in rosy light. In the March issue of the Wisconsin Magazine of History, John C. Reeve gives another view of the life of a doctor in pioneer Wisconsin. Dr. Reeve located in Dodge County in 1849 and practiced there until 1853. On one occasion he became lost in the woods while trying to visit a patient and spent a drizzly night as best he could. The settlers were almost uniformly poor, and money could be found even for the most essential needs only with great difficulty. In his first year of practice Dr. Reeve received in cash the sum of $68. Of roads there were none, although "in two directions there were what were called such, the trees being cut away and some of the stumps removed." One of the writer's competitors was an "herb doctor" who proudly affirmed that he never gave any mineral medicine except the iron in the "cast steel" soap he used in pill-making. But the man had other accomplishments, for having doctored the wife of a settler until her death, he then proceeded to make a coffin, and ended by preaching the funeral sermon! Although Dr. Reeve was not a surgeon, he on one occasion amputated a farmer's arm, using a carpenter's saw for the operation. The patient survived the crude operation, proof perhaps of his vitality more than of the skill of the doctor.

IMMEDIATE STERILIZATION OF WOUNDS.

As an apology for presenting a new method for the immediate disinfection and closure of chronic infected wounds, W. Wayne Babcock, Philadelphia (Journal A. M. A., May 8, 1920), says that a treatment successful in the hands of highly skilled enthusiasts may fail in routine use when it exacts infinite care as to detail over prolonged periods of time, and when it is adapted only to selected cases and requires repeated operations and multiple and, at times, exceedingly painful dressings. The average surgeon is not constituted to stand on tiptoe all the time, his technic is not invariably perfect, and his soul rebels against the constant infliction of pain. It is not strange, therefore, that he has so often failed in his Carrel-Dakin treatment. The new method consists of four procedures carried out in one operation under anesthesia: 1. Chemical sterilization of all sinuses and wound surfaces by the injection and application of a saturated solution of zinc chlorid. 2. Delineation of infected areas by the injection or application of an alkaline ethereal solution of methylene blue. 3. Mass excision of the entire area of infection. 4. Wound closure with the obliteration of all dead spaces. As to the final percentage results, it is too early to speak positively except in regard to soft tissue wounds which, as a rule, are easily and satisfactorily handled by the method. Unless the surgeon can prevent the entrance of the zinc chlorid into the general circulation during and for five minutes after the injection, and unless he is able to excise freely all chlorided tissue adjacent to the important structures, he should not employ the method.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Pathogenic Micro-organisms. By William Hallock Park, M. D., and Anna Wessels Williams, M. D. 786 pages with 214 engravings and 89 full page plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

A Diabetic Manual. By Elliott P. Joslin, M. D. Second edition. 190 pages. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Cloth, $1.75.

Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M. D., B. Sc. Eighth edition. 562 pages with 195 engravings and 9 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

Nurses' Handbook of Obstetrics. By Joseph Brown Cook, M. D. Ninth edition. 468 pages with 189 illustrations and 4 plates. Philadelphia and London: J. P. Lippincott Co. 1920. Cloth, $3.00.

Arteriosclerosis and Hypertension. By Louis M. Warfield, A. B., M. D. Third edition. 265 pages. Illustrated. St. Louis: C. V. Mosby Company. 1920. Cloth, $4.00.

Manual of Psychiatry. By Aaron J. Rosanoff, M. D. Fifth edition. 684 pages. New York and London: John Wiley and Sons, Inc. 1920.

The Problem of the Nervous Child. By Elida Evans. 300 pages. New York: Dodd, Mead & Co. 1920.

Sanity in Sex. By William J. Fielding. 333 pages. New York: Dodd, Mead & Co. 1920.

The Psychology of Dreams. By William J. Walsh, M. D. New York: Dodd, Mead & Co. 1920.

Textbook of Dermatology. By H. Darier. Authorized translation of second French edition. 769 pages. 204 engravings and 4 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $8.50.

The Surgical Clinics of Chicago. Vol. IV, No. 2. 222 pages. 79 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Published bi-monthly. Price per year, Paper, $12.00; Cloth, $16.00.

Shell-Shock and Other Neuropsychiatric Problems. By E. E. Southard, Sc. D., M. D., Boston. Monograph No. 3 of the Psychopathic Department of the Boston State Hospital. Boston: W. M. Leonnard. 1919. Cloth, $10.00.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M. D., F. A. C. S. 223 illustrations and 4 colored plates. 3d edition. St. Louis: C. V. Mosby Co. 1920. Cloth, $5.00.

Personal Beauty and Racial Betterment. By Knight Dunlap. 95 pages. St. Louis: C. V. Mosby Co. Cloth, $1.00.

Sex Attraction. By Victor C. Vaughan, Sc. D., M. D., LL. D. 44 pages. St. Louis: C. V. Mosby Co. Paper, $0.50.

Education in War and Peace. By Stewart Paton, M. D. 106 pages. New York: Paul B. Hoeber. 1920. Cloth, $1.50.

Thoughts of a Psychiatrist on the War and After. By Wm. A. White, M. D. 137 pages. New York: Paul B. Hoeber. Cloth, $1.75.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M. D. Second edition. 844 pages. 433 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00.

A Textbook on Physiology. By Russell Burton-Opitz, M. D., Ph. D. 1185 pages. 538 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $7.00.

Pasteur—The History of a Mind. By Emile Declaux. Translated by E. F. Smith and Florence Hughes. 363 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Surgical Shock and the Shockless Operation Through Anoci-Association. By Geo. W. Crile, M. D., and Wm. E. Lower, M. D. Second edition. 272 pages. 75 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Sexual Impotence. By Victor G. Vecki, M. D. Sixth edition. 424 pages. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $3.00.

The Diseases of Infants and Children. By J. P. Crozer Griffith, M. D., Ph. D., Professor of Pediatrics, University of Pennsylvania. Two volumes with 436 illustrations, including twenty plates in colors. Philadelphia and London: W. B. Saunders Co. 1920.

Orthopaedic and Reconstruction Surgery—Industrial and Civilian. By Fred H. Albee, A. M., M. D., Sc. D., F. A. C. S., Lieut. Col. M. C., U. S. A., Professor and Director of Department of Orthopaedic Surgery at New York Postgradnate Medical School and University of Vermont. 804 illustrations. Philadelphia and London: W. B. Saunders Co. Price, $11.00.

Nervous and Mental Diseases. By Archibald Church, M. D., and Frederick Peterson, M. D. Ninth edition. 949 pages. 350 illustrations. Philadelphia and London: W. B. Saunders Co. 1920.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A. M., M. D., F. A. C. S. Tenth edition, revised and enlarged. 1200 pages. Philadelphia and London: W. B. Saunders Co. 1920.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M. D. Fourth edition. 602 pages. Illustrated. Philadelphia and London: W. B. Saunders Co. 1919.

Pathogenic Bacteria and Protozoa. By Jos. McFarland, M. D. Ninth edition. 858 pages. 330 illustrations. Philadelphia and London: W. B. Saunders Co. 1919. Cloth, $4.75.

BOOK REVIEWS

Henry Mills Hurd, the First Superintendent of the Johns Hopkins Hospital. By Thomas Stephen Cullen. The Johns Hopkins Press; Baltimore. 1920.

A book commemorating the life and services of Henry M. Hurd, the first superintendent of The Johns Hopkins Hospital, has been issued from the Johns Hopkins Press. This book was written by Dr. Thomas Stephen

Cullen, former interne and senior house officer of the hospital, who was familiar with Dr. Hurd's career at the hospital for nearly thirty years. It was at the request of Judge Henry D. Harland, president of the Board of Trustees of the Johns Hopkins Hospital, and of Mr. George K. McGaw, also a member of the Board, that the book was written. This book serves as a written record, equally enduring though less imposing than the "Henry M. Hurd Library Building," which is to be erected upon the Johns Hopkins Hospital grounds in honor of Dr. Hurd's services.

The biography opens with an extract from an article in "The American Journal of Insanity," written by Dr. C. B. Burr,* who was Dr. Hurd's successor at the Eastern Michigan State Asylum, an eloquent and deserved appreciation of Dr. Hurd's services in the institution in question. It was while serving here and doubtless in consequence of the distinction and ability of his services that Dr. Hurd was offered the position at Baltimore.

Dr. Hurd, when visiting Baltimore in 1889 to decide as to the acceptance of the superintendency of Johns Hopkins, was accompanied by a member of his Board of Trustees who wished to dissuade him from accepting the position; but after learning of the importance and magnitude of the work, this gentleman felt it was an opportunity which Dr. Hurd should not neglect, and advised him to that effect.

Our limits will admit only of a brief summary of the contents of this book and of Dr. Hurd's services which were not only of great ability in organizing and administering the hospital, but were also marked by valuable medical activity in many other fields;—as in editorship of the "Johns Hopkins Bulletin"; in the publication of annual reports full of information for both the lay and professional public; in the establishment of a training school for nurses, which maintained under his supervision the highest standard and continues today to rank with the first of its class. Dr. Hurd, during his entire superintendency, also held the position of professor of psychiatry in the faculty of Johns Hopkins Medical School. Of Dr. Hurd's numerous contributions to the literature of psychiatry; of his services in acting upon boards or commissions of research and investigation and in his manifold services to medicine in its social, scientific and public-health aspects, it is impossible to speak fully or too highly. Dr. Hurd was the possessor of a genius for systematizing and accomplishing work, whether literary, administrative, medical or philanthropic. The impress of his personality, which he has left in these fields, is deep and lasting; and it may be considered marvelous that he is with us today in unimpaired mental vigor and with physical powers far above the average for a man in the late seventies.

Finally, we must mention the monumental historical work in four volumes, covering approximately three thousand pages; "The History of the Institutional Care of the Insane in the United States and Canada," for which Dr. Hurd and his associates, on a committee of five, collected material, while he performed the gigantic task of editing almost single-handed. This work was authorized and financed by the American Medico-Psychological Association, through the committee of five, mentioned above, Doctor Hurd being the executive head and giving the spare hours of two or three years to the undertaking. It is to be regretted that he should have suffered from impairment of sight, in part or wholly due to his devotion to his editorial duties.

He retired from the superintendency of the Johns Hopkins Hospital in 1911 and was then made Secretary to the Board of Trustees of the Johns Hopkins Hospital which position he has since held.

Dr. Hurd supplements the biography of Dr. Cullen with a few pages of "Random Recollections," giving many interesting details of his long and distinguished career.

R. D.

*American Journal of Insanity, 1899, Vol. 46, p. 303.

Arteriosclerosis and Hypertension. By L. M. Warfield, A. B., M. D. Third edition. 265 pages. Illustrated. C. V. Mosby Co., St. Louis. 1920. Cloth, $4.00.

Wisconsin physicians and Doctor Warfield's host of personal friends will take particular pride in the third edition of his work on arteriosclerosis and hypertension. Seldom has a medical work appeared which has received such generous praise in the book review departments of the different journals.

It is without exception the most sensible and practical work published for the general practitioner and, while thorough and exhaustive, it is always clear and interesting and written in an easily understood manner. The chapter on practical suggestions is alone worth more than the price of the book.

Arteriosclerosis is not handled as a disease of definite etiologic factor but rather as a degenerative process affecting the arteries and following a variety of causes. New chapters on cardiac irregularities associated with arteriosclerosis and blood pressure in its clinical application have been added. Doctor Warfield's work is recommended to all, without exception.

The Nurses' Handbook of Obstetrics. By Joseph Brown Cook, M. D. Ninth edition. 468 pages with 189 illustrations and 4 plates. J. B. Lippincott Co., Philadelphia and London. 1920. Cloth, $3.00.

The ninth edition of this popular work for nurses has been entirely revised and enlarged by Caroline E. Gray, R. N., superintendent of the city hospital for nurses, Blackwell's Island, and Phillip F. Williams, instructor of obstetrics, University of Pennsylvania.

The subject is presented in a concise, yet comprehensive manner and is easily read and understood. It is richly illustrated and is an ideal work for this purpose.

Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M. D., B. Sc. Eighth edition.

562 pages. 195 engravings, 9 plates. Lea & Febiger, Philadelphia and New York. 1920. Cloth, $6.00.

Doctor Hare has again demonstrated his worth as a medical writer and the fact that his "Symptoms in the Diagnosis of Disease" has reached an eighth edition is proof of its worth and his popularity as a medical writer.

The author has omitted laboratory diagnosis, believing that this subject has now reached a stage where it is so highly developed that it requires special books for its adequate description. In his eighth edition of the work, he has laid special emphasis on symptomatology and the work is devoted to a plan whereby a recognition of symptoms will lead the physician to a diagnosis. To accomplish this, the symptoms used in making a diagnosis are discussed first, and their application to determine the character of the disease follows. The work again receives our endorsement.

Pathogenic Micro-Organisms. By William Hallock Park, M. D., and Anna Wessels Williams, M. D. 786 pages. 214 engravings, 89 full page plates. Lea & Febiger, Philadelphia and New York.

Doctor Park's work has now reached its seventh edition, beginning as "Bacteriology in Medicine and Surgery," and intended then more for medical practitioners than for students or laboratory workers. Each succeeding edition has been revised and rewritten to bring more closely together all of the pathogenic organisms. Part one deals with the general characteristics and methods of study; part two includes the study of individual pathogenic micro-organisms, and part three presents applied micro-biology and the practical application of serums and vaccines. In the present edition, the old subject of immunity has been rewritten and the section on streptococci, on yeasts, and on influenzal bacilli have been extensively revised.

Doctor Park has furnished us with a most comprehensive work, covering the entire field of his subject. It is now a finished product unsurpassed as a reference and teaching work and is deserving of our highest praise.

The Problem of the Nervous Child. By Elida Evans. 300 pages. Dodd, Mead & Co. 1920.

Mrs. Evans, the author, enjoyed the advantages of Dr. Jung's Zuruck school and she presents in this work a well written account of a very live subject. A mentally unwholesome environment plays a most important part in the future life of any child. The work contains many illustrations of the mistakes which are made every day through parents' ignorance of conditions fundamentally pathogenic from the mental viewpoint.

The chapters devoted to the importance of watching the manifestations of sexual instinct in childhood are especially deserving of praise. The work is one which should be in the hands of physicians, parents and teachers.

The Psychology of Dreams. By William J. Walsh, M. D. Dodd, Mead & Co., New York. 1920.

This work by Doctor Walsh takes up this interesting subject with the interests of the general reader in mind and is written in more or less popular style. It should be of value to sufferers from nervous affections as it will aid in a better understanding of various normal and abnormal mental processes.

Sanity in Sex. By William J. Fielding. 333 pages. Dodd, Mead & Co., New York. 1920.

This work is another timely contribution to the impetus given to education in sexual matters by the World War. The book is well written, covers the subject as thoroughly as possible in a publication of 300 pages, and the opinions expressed and the information given conforms with the most enlightened and constructive views on the subject. The work meets the test of practicability and can be safely recommended.

Manual of Psychiatry. By Aaron J. Rosanoff, M. D. Fifth edition. 684 pages. John Wiley & Sons, Inc., New York and London. 1920.

Doctor Rosanoff's work has now reached a fifth edition and, by those interested in the subject, it will be accorded the same cordial welcome which previous editions of his work have received.

New chapters or sections dealing with the application of psychology in psychiatry, psychoneurosis, hyperthyroidism, Stanford's revision of the Binet-Simon scale, standard psychological tests and the classification of mental diseases adopted by the American Medico-Psychological Association have been added. Other sections of the work have been entirely rewritten and the index greatly amplified.

The work is divided into three parts, the first dealing with general psychiatry, the second with special psychiatry and the third consisting of appendices, giving technique of special diagnostic procedures. The new edition is recommended as highly as have been previous editions of the work.

Pasteur—The History of a Mind. By Emile Duclaux, late member of the Institute of France, Professor at the Sarbonne and Director of the Pasteur Institute. Translated and edited by Erwin F. Smith and Florence Hedges, Pathologists of the U. S. Department of Agriculture. Octavo of 363 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1920. Cloth $5.00 net.

This life of Pasteur was published in 1896 and its author has been dead fifteen years. Its translation and publication in English at this time is peculiarly apropos. It is a tribute to probably the greatest Frenchman of the age, a man to whom the world owes an enormous debt of gratitude, and it is only fitting that his life and work should be set before the American people at this time in the clear and interesting manner of this book.

The book is more than a critique of Pasteur—it is a contribution to the biological history of a swiftly changing time, a very striking period in the development of science. It is well written, interestingly illustrated and should see a ready sale.

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A NOTE ON THE VALUE OF NITROUS OXID-OXYGEN ANAESTHESIA IN WAR SURGERY.

Reporting to the Southern Medical Association on his experiences with anaesthesia in war surgery, Dr. Addison G. Prenizer, of Charlotte, North Carolina, formerly Chief of Surgical Service, Base Hospital No. 6, A. E. F., says that nitrous oxid-oxygen was used only between September 10 and November 14, 1918, not that the surgical staff did not prefer it, but because the Unit was late in receiving its apparatus and was not able to secure more gas when the first supply was exhausted.

Publishing his observations (Southern Medical Journal, October, 1919), Prenizer explains that:

"During the 65 days period anaesthesia were given as follows:

Ether	473
Nitrous Oxid-Oxygen	341
Local	87
Chloroform	7
	908

"We have used ether overwhelmingly over other anaesthetics, quite a number of infiltration anaesthesias with novocaine and cocaine and but little chloroform. We have rarely used ethyl chlorid as a general anaesthetic, but have used it locally for small incisions. There was but one death we could attribute to an anaesthetic and that was a death from chloroform in unskilled hands.

"The tranquillity of the patient, the rapidity and ease of induction, the rapidity of recovery and the safety withal gives nitrous oxid-oxygen quite an advantage over the other anaesthetics in the first and second stages of anaesthesia, especially in cases where an absolute muscular relaxation is not needed. Even when ether is superimposed for deeper anaesthesia, the amount is reduced to a minimum to maintain the period of relaxation.

"The types of cases where gas-oxygen is most valuable are:

"1. Shock cases.

"2. Cases where operation is to be of short duration.

"3. Cases where the condition is profoundly bad and the post-operative period treacherous.

"4. Chest cases, with the exception of those liable to show hemorrhage, and

"5. Infection of the respiratory tract.

"Gas-oxygen is of great value in war surgery since the greater number of delayed primary and secondary suture of wounds can be made with the use of this anaesthetic alone.

"The special advantages of gas-oxygen in war surgery are:

"1. Ease and rapidity of inducing anaesthesia, this preventing a struggle, enabling the immediate beginning of the preparation of the field of operation and the carrying on of several parallel operations without the one disturbing or distressing the other.

"2. Rapid recovery and rapid exchange of patients between operating room and ward.

"3. The relief from the care of recovering patients on the wards and the consequent liberation of the personnel for other duties.

"All these points are important when the large number of secondary wound closures are considered as many as 60 in a single day.

"The comfort of the patient is a decided point. There was no death or injury from this anaesthetic."

MEDICAL SPEECH.

James S. McLester, Birmingham, Ala. (Journal A. M. A., May 8, 1920), offers some valuable suggestions to medical authors with regard to the preparation and presentation of papers. Although he fears being misunderstood, he likens the successful medical writer to the ad writer in that the legitimate aims of the two for a certain distance run parallel. The object of each is to say a great deal in a few words, to adhere consistently to the main idea, to emphasize the right point, to hold the reader's interest, and to be readily understood. He says in part: "We often wonder why the literature of some of our English colleagues is so much more readable than our own. I think I know the reason. Is it not that, having little or no conscience for good English, we do not try? In this connection I might repeat the oft quoted statement that genius is an infinite capacity for taking pains. Careful revision of composition and paragraphs, and repeated revision of sentences is essential to the production of readable English. It is said that a good writer never ceases to revise his sentences, and that the lines which appear easiest are often the result of greatest effort. To go over it all time and again, to see to it that compound sentences are well balanced, to put the important word at the end of the sentence, and to avoid redundancy—this is the price one must pay for a sympathetic hearing and a lasting impression." The physicians who read papers before the sections of the American Medical Association are in possession of facts and conclusions of infinite importance. How necessary, then, that knowledge of such inestimable value be presented through a medium which is worthy of the subject! A poor lens in a microscope will obscure and distort the object one desires to study; in like manner will imperfections in the expression of our ideas mar and obscure and nullify the thoughts we wish to convey.

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ORIGINAL ARTICLES

SURGICAL WORK AT AN EVACUATION HOSPITAL.*

BY C. A. EVANS, M. D.,

MILWAUKEE, WIS.

While in France I was on duty at two base hospitals and two evacuation hospitals. The base hospitals were No. 8, the Post Graduate Hospital Unit, New York City, and No. 22, the Milwaukee unit. The evacuation hospitals were No. 1, located just north of Toul, and No. 8, located between Souilly and Verdun. The work at No. 1 was very light while I was there in July, this being a quiet sector at that time. I was on duty at No. 8, as head of a surgical team, during the Argonne drive. The work here was very heavy and I will devote my remarks entirely to the work at this hospital. No. 8 received the seriously wounded and for that reason was the nearest evacuation hospital to the front, at the beginning of the drive. No medical or gassed cases were brought here unless complicated by a severe wound.

In the short time at my disposal, I will try to give you an idea of the conditions under which we worked and then attempt to "hit the high places," which might be of interest to you regarding the methods used in the treatment of certain wounds.

The wounded were brought to us in ambulances and trucks, mostly trucks. The only surgical treatment they had received before arrival was first aid, but this first aid, in every case, was well applied and all fractures were very efficiently splinted. Morphia and A. T. S. had always been given before arrival and noted on diagnosis tag. Before being sent to operating room all cases were carefully examined by medical officers of experience, coolness, and sound rapid judgment. One of these officers was a member of a shock team. They decided whether a case needed immediate operation or could wait his turn, whether a case should be sent to shock ward or to operating room, etc., and it was their duty to see that, in a rush, every operating table constantly had a case ready for it. In case of fracture, no splint was removed until patient was on operating table and as a rule under an anaesthetic. Every case was taken to X-ray room before going to operating room. I wish here to pay a tribute to the work of the X-ray officers at this hospital. I believe they did the hardest and best work of all. There were three of them, working in 8 hour shifts. The X-ray room was a small one just off the sorting room. These men were often in the dark room for their full eight hours. For instance, on Sept. 30th, our six operating teams took care of 210 surgical cases in ten hours, the war record, and every case was fluoroscoped, foreign bodies located by markings, and in several cases plates were developed. That would be an average of 21 cases an hour, or an average of one case every three minutes. Many of these cases would have multiple foreign bodies, one case came to our table with 23 and another with 13, all located by markings on the skin and also a written description of size, relations to bone, etc.

The operating room was an old wooden building with a door at each end. The door of entrance was near the preoperative and shock wards. There were 18 operating tables arranged in a row down the center of the room. Over each table was a large wire cable with a sliding canvas loop, which was used to attach the extremities to, so as to facilitate operating. This permitted access to posterior surface of leg or thigh without turning patient and there is no better position for an amputation of the arm than to have the hand tied to a cable above the head. The whole length of one side of the room, except for a door leading out to a tent, which was used as a sterilizing room for instruments, was occupied by a long table for sterile instruments, gloves, dressings, etc. On the side opposite to this were the stoves, wash basins, tables for scribes, and a space for entrance and exit of patients. There were plenty of windows giving a good light. The electric light for night work was good, the drop light being used

*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 2, 1919.

mostly. When lights were on, the windows were carefully covered so as not to allow a single ray of light to be used as a target for a Boche aviator. Signs posted above the operating tables told us that there was to be "Silence" and "No Smoking." At one end of the operating room were posted some general orders informing us that no amputations should be done without consultation, and that all amputations must be done by Guillitone method, that all joints must be closed, that no primary suturing of wounds should be done except in cases of joints, brain, abdominal, and chest wounds, and also something about all shock cases should receive gum salt solution. All very good orders, under the circumstances, except the gum salt order.

There were the usual number of nurses and enlisted men attached to the hospital. Also shock teams, dental surgeons, eye, ear, nose, and throat surgeons, extra officers who acted as ward surgeons, one strictly medical officer, and a very competent laboratory man with a well equipped laboratory. All operative work as well as the post-operative care was done by surgical teams. There were twelve (12) teams at No. 8, six on day and six on night duty. Each team consisted of head of team, one assistant, one anaesthetist, one clean surgical nurse, one dirty surgical nurse, and two enlisted men. Each team worked in twelve-hour shifts.

The instruments used were sufficient in quantity but of only fair quality. Except for special work about all one needed were scissors, hemostats, and tissue forceps. The knife was seldom used. There were a large number of small wooden tables made by the enlisted men and instruments sufficient for one operation, together with some catgut and sponges, were placed on a towel on this table. At our tables all instruments were changed after each debridement, even if several on same soldier, as often happened. After each operation the towel together with instruments were removed by the dirty nurse, instruments taken to sterilizing room, and another table was placed handy with necessary instruments, picked out by surgical nurse and placed on table by her only. At end of each operation we would tell her the nature of next operation and she would have instruments needed and seldom would we need any extras and she was doing this same thing for six tables. The exact number of Carrel Dakin tubes needed was called for and number always noted on field medical card. It was not unusual to use from 10 to 15 tubes in one wound. And because of scarcity of tubes, it soon became necessary to remove them before the case was evacuated to the base. This was done also because we learned that the treatment was not being kept up on hospital trains. The surgical nurse was never allowed to assist in any way at operation nor was the surgeon allowed to touch her instrument table nor remove any instrument from it. She did not, as a rule, change her gloves during her entire shift nor where there any solutions of any kind, except Dakin's for rinsing the hands. The gloves were dry sterilized. We did not change our gloves until patient was disposed of but did wash our gloves with Dakin's solution after each debridement on same patient. I saw no white operating suits anywhere in the A. E. F. We operated in our olive drab breeches, woolen shirts, knee boots, often with mud to ankles. We were not allowed aprons except in abdominal cases and then often we could not get them. In place of white apron a thick heavy rubber apron was used. There were plenty of rubber gloves, mostly size nine, and the heavy long webbed French gloves. Iodin was scarce and it soon became necessary to conserve. Wood alcohol was the only alcohol on hand soon after work started. For washing the hands there were several large pipes connected with a spring of real cold water. There was plenty of green soap. Not long after work started we were allowed only one towel for an operation and underneath this towel was placed a small rubber sheet. It was not at all unusual to have a case of gas gangrene to debride or amputate and the next case would be a knee joint closure. But I feel certain that there were but very few wounds contaminated. One learned how to keep away from a wound except with instruments. There were plenty of sponges and dressings.

When the stretcher bearers brought a case into the operating room an orderly read off to the chief of surgical service, who had the first tables from the door, the diagnosis and X-ray findings, and the chief assigned the case. In a big rush the case was placed on whatever table was empty, and if none empty they were placed on the floor along side of the wall to await their turn. As a rule, however, cases were brought in only when there was a table about to be emptied. Before operation, where indicated, our team made a preliminary examination for

nerve injury and noted findings on field medical card. After operation all cases were bandaged by our enlisted men. In case of fracture we did not apply the splint but called a "splint man," whose only job was that of applying splints. This saved a good deal of time. When about through with an operation we would call our scribe, who was an enlisted man, and dictate to him our findings, nature of operation, time from injury to operation, number of Dakin tubes used, whether to hold or evacuate the patient, etc. He would write this on the field medical card and sign our name. This record went with the patient and was often never seen by us. The scribe copied a record of each case in a note book which was the property of the hospital. Our anaesthetist made another copy, at her leisure, so we have a record of every case operated on by us. We ordered "held" all amputations of thigh, all severe compound fractures of humerus and femur, all chest, abdominal, brain, and joint cases, and any other case where patient was in poor condition or had been debrided for gas gangrene. Patients in shock were sent to shock ward. This meant that a large number of cases were held for from ten days to six weeks or even more. No patient was allowed to leave when it would endanger his life to do so. The holding of so many patients increased our work of after care, but also gave us a far better chance to study them and gave the injured man a far better chance for recovery. No. 8 was one of the largest evacuation hospitals in this sector, making the "holding" of these cases possible. Except in a great rush, a culture was made of every wound before and after debridement. A culture was always made of every suspected gas gangrene case both before and after operation.

ANAESTHETICS.

The nurse anaesthetist proved very satisfactory. Local anaesthesia, when idicated, was largely a question of time, and time counts in evacuation hospital work. Local anaethesia was very unsatisfactory in debridement. It was used in the majority of brain cases. Nitrous oxid was not available at No. 8 but feel it should be used in the majority of cases provided a skilled anaesthetist is available. Time would be saved by its use and patients could be evacuated earlier and in better condition. At No. 8 uniformly good results were obtained with ether. This was the case even in shock ward cases provided the operation was done quickly.

POST-OPERATIVE DRESSING.

The best looking wounds arriving at Base Hospital No. 22, located at Bordeaux, several days from the front, were those dressed with Dakin's solution by Carrel method. This was used in all cases at No. 8 and irrigation kept up as long as case remained in hospital. No case was allowed to be evacuated with the wound packed. If packing was necesary for hemorrhage, a vaseline pack was used and case held until pack was removed.

DEBRIDEMENT.

I consider the following as necesary for a good debridement:

1. Preliminary examination for nerve injury.
2. A consideration of the nature and location of the injury, the general condition of the patient, and whether or not he is to be evacuated or held.
3. A proper anatomical incision large enough to do a thorough job without injury to the tissues, due to rough handling and retracing.
4. Removal of all damaged and contaminated tissue, especially muscle.
5. A very conservative removal of skin.
6. Removal of all foreign bodies, even if operation is prolonged, provided condition of patient, location, and size of foreign body warrant it.
7. Exploration of bed of foreign body for particles of clothing, dirt, etc.
8. Removal of loose bone fragments.
9. Careful ligation of bleeding vessels.
10. Do not pack wound with gauze—if necessary to pack use vaseline gauze and hold patient twelve hours, when pack should be removed.
11. When more than one debridement on same patient, gloves should be changed or washed in Dakin solution, and there should be a complete change of instruments after each debridement.

GAS GANGRENE.

Fifteen per cent of cases coming under our direct care showed marked clinical evidence of gas gangrene and bacteriological findings were positive in a large percentage where there was no clinical evidence. As predisposing causes of gas gangrene I would place:

1. Low vitality from shock and hemorrhage.
2. Insufficient debridement.
3. Ligation of main artery of a limb.
4. Tight packing of wound.
5. Tight bandages.

In gas gangrene it is not justifiable to base local operation or amputation on the bacteriological findings alone. The indications for local operation or amputation depend entirely on the condition of the patient and the extent of the involvement. If the patient is in good condition and the involvement is limited to one muscle or group of muscles, even if circulation is impaired, a local operation should be done. If the patient is in shock, even if gas gangrene involvement is not very extensive and even if circulation is not greatly impaired, an amputation should be done. If patient is not in shock and gas gangrene is extensive, involving more than one muscle group, an amputation should be done. Shock ward patients are too often gas gangrene patients and should more often be given a chance by immediate operation.

AMPUTATIONS.

The Guillotine operation is the amputation of choice at an evacuation hospital in France. It lessens shock, shortens the operation, and allows amputations at lowest level. It decreases the danger of infection, exposing the least amount of raw surface, and does not impair circulation. It lessens the risk from secondary hemorrhage.

SECONDARY HEMORRHAGE.

The cause of secondary hemorrhage is infection and it was a constant source of worry in war surgery. It would occur several days or weeks after the primary injury but usually gave a warning by a slight oozing before the flood came. It seldom occurred in the wide open wounds with good drainage but usually occurred in the wounds where conservative surgery had been done or no surgery at all. But always in the presence of infection. It has always been held that Dakin's solution predisposes to secondary hemorrhage. I am a firm believer to the contrary and hold that it prevents secondary hemorrhage, regardless of the kind of suture material used and that the earlier it is used the less the chance of infection and resulting secondary hemorrhage. We always started our Dakin's solution immediately after operation in every case. In our Guillotine amputations we almost covered the end of the stump with Carrel-Dakin tubes, placing them in direct contact with the ligated vessels, started our solution at once and repeated it every fifteen minutes, and never saw a resulting secondary hemorrhage. We used plain catgut for ligation. In treatment of secondary hemorrhage temporizing usually means disaster. Ligation of both ends of bleeding vessels should be done if possible. In case of an extremity should there be more than one recurrence after an active attempt to get the vessel by ligation an amputation should be done. These septic bleeding cases demand active surgery. At one base hospital in France the mortality following amputation for secondary hemorrhage was 95%. At Base Hospital No. 22 we did not lose a case of any kind from secondary hemorrhage This was due to immediate active surgery.

JOINTS.

The rule was to close all joints after a careful debridement. In the discussion of joint wounds we will take the knee joint as an example. In T. & T. machine gun and rifle wounds no operation was done unless there was considerable blood in the joint or a comminution of the articular surfaces. Other G. S. W. were debrided, joint irrigated with ether and salt solution, and closed completely, synovia, capsule, fascia, and skin. Some surgeons closed only the capsule, leaving the skin wound open. What type of knee joint injury demanded immediate amputation?

1. Severed popliteal artery.
2. Marked destruction of soft parts including popliteal nerves and comminution of articular surfaces.
3. Sepsis with marked comminution of bone.
4. Gas gangrene.

Injuries with considerable destruction or articular surface may demand immediate resection. The after treatment consisted of active and immediate mobilization. No splint was applied. At our tables we treated eight knee joints by the above method of closure and immediate active motion. All were kept at No. 8 for at least ten days. All healed primary and had from 45 to 90 degrees flexion when they left. None needed aspiration. We know the end results in only two cases—both have a perfect result. Five were complicated by fracture, in three the patella was badly comminuted with fragments driven into joint, one had fracture of tibia and patella, another a fracture of femur. From our experience at the base, we do not feel at all sure that these cases escaped a late infection for we know that many joints complicated by fracture did nicely for days and even weeks and then developed an infection, this infection not starting in the joint but in the

bone and extending into the joint. But bone destruction is not a contradindication to closure and active mobilization. This war has taught us that joint synovia is more resistant to infection than other tissue—it seems to have a bactericidal power.

CHEST.

The indications for operation in chest cases were:

1. Sucking wounds.
2. C. C. F. of one or more ribs.
3. Hemorrhage from intercostal artery or lacerated lung.
4. A large foreign body in a position where it can be readily removed and the patient in a condition to stand removal.

Our experience was limited to fifteen cases, ten of them complicated by other injuries, so severe in nature as to make the chest wound seem the least important. In only one case did a radical chest operation seem indicated and in this case a radical operation was done. In every case where there was a sucking wound the patient was rolled over and the blood was either allowed to run out or was aspirated out and the sucking wound closed after debridement. Only one of the fifteen cases died while at No. 8 and all were kept for two weeks or more. We know nothing of the late results. Other things being equal it would seem that a G. S. W. of the chest should be treated the same as any other G. S. W., and the wound closed. But from our experience at two base hospitals, we can not help but feel that in the large majority of cases the conservative treatment of chest injuries is the treatment of choice. We evacuated to the States a very large number of men who had a large piece of high explosive in the lung and yet appeared to be perfectly normal. The same cannot be said of the few cases we saw who had received a radical operation. The through and through machine gun and rifle wounds of the chest seldom needed any more than aspiration.

SHOCK.

This was in charge of trained shock teams. They worked hard but the odds were against them. This was due to the unavoidable conditions of war. The wounded often lay for hours before they could be picked up, and even if picked up it might be hours before they could safely be taken to the rear, and after entering the evacuation hospital it might be a few hours before their turn for operation would come. For instance the records of cases operated on by our team on Sept. 26th, the day our boys went over in the Argonne, the length of time from injury to operation averaged eleven hours. Of the cases operated on by us from Sept. 26th to Oct. 2nd, the average length of time from injury to operation was 44½ hours, nearly two days and nights. And at this time we were the nearest evacuation to the front. From Oct. 2nd to Oct. 10th, the interval was only thirteen hours, a marked improvement. The amount of shock varied from day to day, depending on the length of time the soldier was engaged in active fighting. The first day of battle the men came back in fairly good shape, the second day not so much so, and after three to five days of active fighting and exposure they were so "all in" that even a slight wound often produced considerable shock. The fresh troops would go into battle and our shock cases would decrease again. I can not see that the treatment of shock has changed any because of the war, unless it be in the use of gum salt. As to fluids, blood, as before, holds first place. But it was seldom available, partly due to the fact that so much faith was placed in gum salts. I saw many good results from use of intravenous salt solution, properly given. I saw no good results from the use of gum salt, and did see ill effects from its use.

From the above remarks one might be led to think that the mortality of patients operated on at an evacuation hospital was extremely high. But in fact it is surprisingly low. My team's mortality at No. 8 was 3.5% and in this we include two bad cases we operated on the day before we left, taking for granted that both died. Many, of course, may have died after leaving the hospital. But we kept our bad cases for more than a reasonable length of time and would not evacuate them on to the base unless in good condition.

I have tried to tell you briefly how we handled certain surgical problems at an evacuation hospital. This does not mean that these problems were solved in the handling. The surgeons at the front felt that their results were all that could be desired but many of us, who saw these cases, later on, at the base, feel that many of the problems of war surgery have not been solved. We do, however, know that the American surgeon did remarkable work in this war and I have noticed that those who criticise his work at the front are usual-

ly those who never attempted it. I feel that the work at No. 8, under the circumstances, could not have been improved upon and that the results obtained were, in large part, due to the ability and personality of Lt. Col. A. M. Shipley, chief of the surgical service.

TUBERCULOUS KIDNEY.*

BY ARTHUR G. SULLIVAN, M. D.,
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In casting about for a suitable subject to present at this joint dinner of the Milwaukee County Medical Society and the Wisconsin Surgical Association, following receipt of your kind invitation, the topic "Tuberculous Kidney" presented itself as one having many features of interest in which both the medical and the surgical fields equally and unavoidably share. The scope of the subject is tremendous, and an entire evening could easily be devoted to a discussion of the pathology alone and a much longer interval would be required for an adequate consideration of symptoms and diagnosis as well as of treatment and prognosis. The literature is voluminous, and a competent survey is so beyond my time allotment, and my personal limitations, that I can but present a few of the high lights reflected by my experience with this disease.

Unilateral tuberculosis of the kidney occurs in all parts of this state, the patient as a rule first consults the physician, and depending entirely upon his early recognition of the pathology, the patient's outlook rests, and the surgeon's endeavor begins. It is a lamentable fact that both medical and surgical men have so frequently failed to diagnose unilateral kidney tuberculosis and the large number of Wisconsin kidneys which are removed yearly in Illinois and in Minnesota, is a sad but tangible commentary upon the situation. We have become proficient in the diagnosis of ectopic pregnancy, of perforated ulcer, of cholesystitis, and scores of other entities in which both the medical and the surgical professions bear responsibilities—but from my visits to the clinics and hospitals of this, and nearby states, I am convinced that we must put forth sustained efforts immediately toward the early and certain diagnosis of kidney tuberculosis.

Pyogenic renal infections, renal calculi, and tumors of the kidney for reasons peculiar to their several pathologies have usually focused our attentions on the renal area with consequent frequency of early correct diagnosis—but unfortunately the victim of unilateral kidney tuberculosis often has so little interest in any other portion of his anatomy than his insistent burning bladder, he concentrates our attention and therapy on that viscus, and we seem so hypnotized by the bladder symptoms, we fail to raise our eyes to the offending organ, the kidney. Nor is this all! The sufferer returns and returns, giving a long history of bladder irritability, and no evidence of relief from irrigations, urotropin, properly administered, increased fluids or other standard cystitis therapeutics. Dr. William Braasch of the Mayo Clinic states that 71% of their renal tuberculosis patients have had symptoms for more than one year.

Much time has been spent in discussions of this subject as to whether renal tuberculosis is an ascending or a descending infection; whether this disease is ever primary in the kidney, or always secondary to some tuberculous lesion outside the genito-urinary tract. Great arrays of statistics and facts have been presented and much acrimonious discussion has centered upon whether renal tuberculosis of one kidney should be treated medically, expectantly, palliatively, or surgically. And curiously enough, like our entrancement with the patient's troublesome bladder, our attention has been arrested by these interesting and valuable discussions, and the established methods of making an accurate diagnosis have been lost in the shuffle.

Certain it is that renal tuberculosis may be one of the most difficult, or one of the easiest diseases to recognize of all the ills of the genito-urinary tract. A good cystoscope is an essential and competent X-ray facilities must be available if we are to discover a creditable percentage of the presenting cases. I believe any physician with conscientious effort can sufficiently master in a few months, a cystoscopic technique which will permit him to explore these relatively new fields to his intense satisfaction, and better understanding of tuberculous and other lesions of the urinary apparatus. Expert instruction is cheerfully forthcoming from our genito-urinary brethern and Braasch, Cabot, Hunner, Kretschmer, Kelly, and many others are adding authoritative suggestions monthly as to improved methods of diagnosis, and the proper

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*Read at the meeting of the Wisconsin Surgical Association, Milwaukee, May 13th, 1920.

evaluation of the results of examinations. One cannot charge the genito-urinary specialists with attempting to conceal their ingenious diagnostic schemes, nor can one complain of absence of clinical material, unless he may be so fortunate as to live in a community where the tubercle germ does not exist.

Any cystitis with pus in the urine, in which the symptoms fail to yield to cystitis treatment within one month should be strongly suspected of being tuberculous and properly investigated. If obtained by an uncontaminated ureteral catheter a pus containing urine with acid fast bacilli shows no growth upon suitable culture media after forty-eight hours incubation, a very important addition to the evidence of tuberculous kidney is secured. If in a cystitis, the cystoscope shows normal bladder, and pus and blood are found in a centrifuged specimen of urine obtained by ureteral catheter, tuberculosis of that kidney is likely. If the urinary meatus is inflamed, or if there is an inflamed oedematous area of bladder around it, or even one or more isolated areas of congestion or ulceration in an otherwise normal appearing bladder, tuberculosis is highly probable.

A careful functional test is essential on urines from either kidney. Frequently the tuberculous kidney will excrete twice as much urine as the normal side. Analysis, however, will reveal that its urea content is practically nil. A useful expedient in locating a ureteral opening in a contracted bladder with bleeding and pain is the intravenous injection of indigo-carmine solution. The dye usually appears in two to twelve minutes and the spurt of blue urine on the red bladder background is of great aid when oedematous bladder hillocks and ulcerated areas conceal the meatus. The guinea pig test is final but it is disadvantageous at times to await the requisite six weeks.

Eckford's method of X-ray exposure of the inoculated pig, thereby increasing susceptibility to tuberculous infection, has reduced this time to two weeks. Tubercle bacilli are found in the stained centrifuged urinary sediment in 80% of the renal tuberculosis cases. Failure to find the germs is usually a technical difficulty comparable to the results of unskilled versus skilled laboratory sputum examinations. Beware the Smegma bacillus! The ureteral catheters must be uncontaminated, and especially guarded from this prevalent organism, whose morphological characteristics unfortunately so closely resemble those of the tubercle bacillus.

About 70% of these patients consult us in regard to urinary frequency, varying degrees of tenesmus, nocturia, or sudden painless hematuria. Only 30% seek relief because of pain in the kidney area, and of this latter group, many have had their symptoms ascribed to gall bladder disease, gastro-duodenal difficulties, lumbago, intercostal neuralgia, etc. Many of the hematurias which have been at first labelled idiopathic or essential, have later fully demonstrated their tuberculous character. An intermittent hematuria with acid urine containing pus, should always arouse suspicion. The early discovery of the disease is especially desirable in the male, for he will otherwise quickly develop tuberculous infection of the epididymus, testicle or prostate. Crabtree states that in the male 32% develop tuberculous epididymitis either before or after nephrectomy for renal tuberculosis. The necessity for a careful cystoscopic examination of all males with genital tuberculosis, therefore, is fully apparent. Early recognition of this difficulty will prevent tuberculous ulceration of the bladder, which usually occurs earlier in men, and in both sexes is a terrific burden and torment. The sufferer's immediate and late prognosis is materially affected by the degree of bladder ulceration and a single experience with it will convince one that it is stubbornly resistant to treatment.

When it has been established that the patient has unilateral kidney infection, no time need be lost on contemplation of the proper course of procedure. In days gone by, there were many advocates of the hygienic, dietary and watchful waiting methods of curing renal tuberculosis. The many arguments put forth by supporters of this plan, seemed to hinge entirely upon the reasoning that inasmuch as pulmonary tuberculosis healed with this accepted form of treatment—renal tuberculosis, by analogy, should be equally submissive. Fortunately during the past ten or fifteen years, a careful statistical comparison of the results obtained from medical and surgical methods has revealed an unquestionable balance in favor of early nephrectomy, and the analyses made the past three or four years with "follow-up-systems" by our most prominent medical authorities have unanimously indicated that expectant treatment in unilateral renal tuberculosis is fraught with danger and that early nephrectomy is the only

promising plan. Medical opinion on this matter as reflected in the recent writings of Braasch, Crabtree, Hunner, Lower, Eisendrath, Kretschmer, Bransford Lewis and others, permits of no other conclusion than that from "expectant" treatment the only "expectancy" the patient should anticipate is a visit to the undertaker's, and that a course of "watchful waiting" will bring the same dire results as the "watchful waiting" of political fame. Nephrectomy has nature's endorsement. If the individual survives tuberculous easeation of a kidney, an accompanying ureteral stricture occasionally performs an autonephrectomy, frequently followed by a partial symptomatic recovery.

Surgical intervention must contemplate (a) the patient's ability to weather the storm, (b) the competency of the other kidney to assume the additional burden, (c) the degree of destruction of the involved kidney and ureter, and finally (d) that there are no tuberculous lesions elsewhere in the body of such extent, or involving such organs, as to render the performance of nephrectomy useless.

I have found that the W. J. Mayo kidney incision yields the most satisfactory mobilization of the twelfth rib, wealth of exposure and firm healing. His two-clamp method of pedicle ligation is of splendid value and adds greatly to one's assurance when handling these often friable structures. A single experience with an intestinal fistula—particularly a duodenal fistula—resulting a few days subsequent to a hurried and ill-advised grab with a hemostat for a suddenly spurting renal vessel, will convince one that the patient's safety and the operator's composure and efforts will be much conserved, by grasping the pedicle with thumb and forefinger, unerringly directed to the bleeding vessel by the spurt of blood against the finger tips, a method described by W. J. Mayo and occasionally unintentionally demonstrated by him in his operating room.

There is a unanimity of opinion as regards the general surgical procedure with exception of the proper treatment of the ureter, and the question of drainage of the wound. All sorts of schemes for the treatment of the ureteral stump have been advanced and the ideal method has not yet been accepted. This is largely due, I am certain, to the varying degrees of the thickening, contraction, or dilation, in which the ureter is found. The question of total extirpation of the ureter is also much argued, and in my opinion will be the subject of controversy until it is agreed that the pathological condition of each ureter must determine its individual treatment. Ordinarily, the injection of fifteen minims of phenol and ligature of the end with plain catgut suffices, although in addition, the ureter end should also be anchored to the lower angle of the nephrectomy wound.

On the contrary, I am convinced that failure to extirpate a thick walled, dilated, tuberculous infiltrated ureter, especially if occluded from the bladder by stricture, is to invite a tuberculous sinus, a reoperation for removal of the ureter, and too frequently, the patient's death from the retained tuberculous tissue. Many a good nephrectomy has been wasted by an ignored bad ureter! I believe the wound should not be drained unless hemostasis is uncertain. If tuberculous material is accidentally spilled, a flushing with hot saline and complete closure is less likely to be followed by a slow healing sinus than if the cavity is drained for even a few days.

On the other hand, of their 103 cases which were so managed, Crabtree and Cabot report that of those closed without drainage only 25% failed to reopen and discharge for varying intervals. It is evident that in the matter of drainage, as well as in other essentials, each case must be a law unto itself, and that good judgment has not yet been entirely supplanted by routine.

When ureterectomy is necessary, E. S. Judd's plan of exposure of the lower end of the ureter is most gratifying. Section of the ureter near the kidney usually gives better exposure of the pedicle, but I have found the following plan of value;—at the expense of a little greater difficulty the kidney is excised without cutting the ureter. Then by tracting on the kidney with one hand, and finger dissection with the other, the ureter can almost invariably be quickly stripped from its attachments, down to the bladder. Care should be exercised when working at the point where ureter crosses iliac vessels. With the kidney outside, the nephrectomy wound may then be closed snugly around the ureter and a small incision made over its bladder attachment, where, after pushing back the peritoneum, the previously dissected ureter will be immediately discovered. Apply clamps close to bladder, cut ureter, carbolize and ligate the ends, following which, the assistant can readily withdraw ureter by traction on the kidney. This is far simpler, and less likely to carry infectious

material throughout the entire area than the method described so universally, of dragging the kidney down through, and out of, the incision over the terminal ureter.

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BACTERIOLOGICAL EXAMINATION OF WOUNDS TO DETERMINE TIME OF CLOSURE.*

BY E. L. THARINGER, M. D.,
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The bacteriological study of wounds to determine the time of closure, occupied considerable of the time of the laboratory worker in the A. E. F. The field was an entirely new one to most of us. A technique had already been developed, and the new worker upon his arrival in France, adopted this with a degree of satisfaction and with the idea that if this technique was followed the time when a wound would be sterile could have been definitely stated. After only a few weeks, he found that the result obtained did not conform to his ideas, nor to the bacteriological findings. Consequently his technique varied, until finally, wound bacteriology only occupied a small amount of his time, and the surgeon appeared to be more or less disinterested in the cultures.

The number and kind of bacteria demonstrated to be ordinarily present in infected wounds is large and varied. In examining a wound bacteriologically we have to contend with the following list of organisms:

COCCI.

Streptococci, hemolytic and non-hemolytic, veridans and mucosa.

Staphylococci, hemolytic and non-hemolytic, albus, aureus and cutis.

Pneumococcus, enterococcus.

BACILLI.

Coli communis and Friedlander.

Pyocaneus and proteus.

Diphtheria and diphtheroids.

B. Welchi, vibrion, septique, toxicodema, tetanus, anthrax, subtilis, anthracodes, mesenterieus, myscoides, and histolyticus.

With this large number of organisms confronting the bacteriologist it can readily be seen that the task of cultivation and isolation was an enormous one. Especially since the work was being done with a viewpoint of aiding the surgeon to determine when the wound could be safely closed, and remain closed, and had to be finished before the wound closed without surgical interference. In addition there were a large number of wound cases in the hospital at all times; some of these patients having from five to fifteen separate wounds. The military necessity of moving patients upon a moment's notice also had to be contended with and often lead the bacteriologist to discover that the patient whose wound he had cultured, and from which he had isolated a half dozen different organisms had been moved to another hospital.

The aim of the bacteriological study was, first, to gain knowledge of the degree of infection at the beginning of and during the course of treatment; second, to follow the progress of the disinfection so that, if the wound did not improve as it should additional measures could be instituted. Third, to substantiate the clinical symptoms in order to determine the proper time for surgical closure without danger of recurring infections.

Bacteriological control was usually only employed in wounds that were being disinfected with Dakin's solution. The irrigation was discontinued for about two hours before the time for chang-

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ing dressing. When the dressing was removed, a sterile swab or platinum loop was rubbed over the most infected portion of the wound, that is the area showing the greatest amount of necrosis or exudation; from the material thus obtained smears were made. The smears were stained with carbol thionin, methylene blue or some other appropriate stain. The number of bacteria per field of the microscope were counted. This was done every day in some cases, in others every second or third day. A certain degree of care had to be exercised in making these smears, because a smear twice as thick as one taken the previous day would show twice the number of bacteria and be somewhat misleading. The number of bacteria counted were designated somewhat in the following manner: If there were too many to count per oil emersion field, the number was said to be innumerable, otherwise there were fifty to one hundred to a field, thirty to fifty, twenty to thirty, fifteen to twenty, ten to fifteen. Charts were often prepared showing what was termed a bacterial curve. When there were fewer than ten to fifteen bacteria per field, about twenty fields were counted and the average taken. When the number became reduced a little more care was exercised in making the count, and numerous smears were made from various areas of the wound. After the number of organisms was reduced to one to every four or five fields, in successive examinations at intervals of one or two days, the wound was ready for closure. To quote from "The Technique of the Carrel Method," by J. Dumas and Anne Carrel. "The surgeon may then close the wound with a fair presumption of success, no matter if it is a wound of the soft part or a compound fracture."

If the bacterial curve was not favorable, that is if the count did not decrease from day to day, the unfavorable course was due to bacterial foci from necrotic tissue, projectiles, foreign bodies, pieces of clothing, bone sequestra, poorly applied dressing or errors in the use of Dakin's solution.

In conjunction with bacterial counts and later replacing them, cultural work for the isolation and determination of the presence of especially pathogenic organisms was done. Primarily these cultural examinations attempted to isolate all the bacteria present in a wound. This was early given up as impracticable because of the amount of work and material required, and the lack of practical information, after the organisms had been isolated and identified. At this time the greater part of the previous work was discontinued and all efforts were then directed to the organisms that were known to be detrimental, by reason of their having been found in wounds that had broken down after surgical closure. The streptococcus hemolyticus was frequently found in cases of reinfection, the staphylococcus hemolyticus in fracture cases, or in wounds where there was bone involvment. The B. of Welch or B. of gaseous Oedema is known to cause reinfection in wounds that have entirely healed, often after a period of several years. When the surgeon dressed the wound a sterile swab was rubbed practically over the entire surface of the wound, and then immediately placed into a tube of liquid culture media. It was immaterial what media was used, providing it was liquid. This was sent to the laboratory. Reinoculations were made from this for anaerobic organisms, particularly the B. of Welch, streptococcus and staphylococcus hemolyticus. A special media called "Villion Media," devised by the French, was used for the anaerobic cultures. This media consisted of Agar Agar and an infusion of ground beef that had been incubated for several days. In inoculating villion media from the media containing the swab, dilutions were made to reduce the number of colonies so the morphology of the widely separated colonies could be studied and the presence of the B. of Welch confirmed or excluded. Another special media, liver media, or streptococcus media was inoculated. This consisted of a piece of human liver in peptonewater. In this media streptococci grew rapidly, often in three or four hours. If streptococci were found, sub-cultures were made of blood agar plates to determine their hemolytic properties. The presence of hemolytic staphylococci was determined at the same time.

Often much of the foregoing was omitted and hemolytic staphylococci alone were sought for. Opinions as to what organisms could safely be allowed to remain in wounds when they were closed, differed. Wounds were cultured upon the entrance of the patients into the hospital and again before closure. Meanwhile the progress of the wounds was judged clinically, rarely by bacterial counts, as these were practically forgotten at this stage.

While the foregoing is the development or disintegration of war wound bacteriology, it must be remembered that many surgeons for reasons of their own did not resort to any of these methods

at any time. Consequently many of the war wounds did not receive a modern bacteriological survey, but just ordinary pre war treatment. At Base Hospital No. 8, two hundred secondary closures were made. One hundred with bacteriological control and one hundred without. Doctors Evans and Lillie took an active part in the surgery of these cases and claimed that the number of reinfections were about the same in both groups.

CONCLUSIONS.

Wound bacteriology was not what might be termed a success. The results obtained did not approach the expectations, nor were they equal to the efforts expended. It was admitted that the counts were only approximately, but as a matter of fact they were often entirely misleading; the clinical course being satisfactory, but the bacterial curve alarming. It must be conceded, however, that in the majority of cases the counts did decrease, but only after a longer period than that originally prescribed by the Carrel method. Whether or not this occurs in all wounds, unless death ensues is left to your own judgment.

It is admitted and can be demonstrated, that bacteria are often found in the tissues beneath the surface. Whether this is an active process of invasion or an inclusion by granulations, is not of interest here. These bacteria cannot be counted, neither can they be cultivated by any of the methods used.

Bacterial cultures are only conclusive in their positive phase, that is they prove the presence of organisms obtained. A negative blood culture does not prove the absence of bacteria in the blood stream. Then again, there is encountered the difficulty of culturing some organism even though their presence is known. Very often positive cultures will not grow upon transplantation, where the conditions are more favorable than in the primary culture. This is particularily true of the most dangerous organisms, the anaerobic gas-bacilli. The war has taught many valuable details regarding the bacteriology of wounds and we have learned how wounds cannot be controlled bacteriologically and that this problem must be attacked from other angles than those above outlined.

DISCUSSION.

DR. C. A. EVANS: Dr. Tharinger has spoken of the work done by our operating team at Base Hospital No. 8. It might be worth while to give you the results of our work here. The patients at No. 8 were treated by open air method. While we were at this hospital we operated on 41 cases of secondary closure. Eighty-three per cent were successful, 10% partially successful, and 7% failures. Of these 41 cases 32 of them showed positive cultures, 6 cultures not taken, and only 3 showed no growth. Of those with positive cultures 88% were successful, 9% partially successful, and 3% failures. Where the culture was not taken 50% were successful, 17% partially, and 33% failures. Where there was no growth 100% were successful. But there were only three that showed no growth. We operated on everything except the streptococcus hemolyticus and the gas bacillus.

Our small experience there shows that where there is no growth the chances of success are practically certain. Where there is a positive culture, and it is not streptococcus hemolyticus, the chances of success are fair, in our cases 88% were successful. But where a culture was not taken only 50% were successful and 33% failures. We know that some of these failures was due to streptococcus hemolyticus. If the wound is only a surface wound, not a through and through wound, it does not make much difference whether or not the culture is positive, for in such a wound one can excise completely without contamination. But where you have a through and through wound your chances of success are much less for there is always a place where you can not remove all infected tissue. Not all of our successful cases healed primary for several of them became infected. But this did not alarm us greatly. We would not remove the stitches but would squeeze out the pus between the stitches and the next day squeeze out some more pus and keep this up until there was no more pus to squeeze out and our wound would go on to closure and no harm was done. But this was never the case when there was a streptococcus hemolyticus present. The appearance of the wound would tell us to open it at once and widely. I would say that towards the end of the war the surgeon was not paying very much attention as to whether or not a wound was infected in their secondary closures, unless it was infected with streptococcus hemolyticus.

HEADACHE IN ITS RELATION TO EYE STRAIN.*

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The best definition of ocular headache that I can recall is the following: "An acute discomfort in and about the head that directly or indirectly results from organic or functional disorder of the visual apparatus."

Since this country became a Sahara I venture to say that more than half of all headaches are ocular in origin, due to the severe eye strain in damp, dark cellars. Prior to the "dry era" most

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text books credited the eyes with 50% of all headaches, but then according to a witty French philosopher, "Statistics are but lies in the shape of numbers."

At the county dispensary we are obtaining accurate histories in the eye department, with special emphasis on the symptom headache. You will note on the history card that we record the time of day that it makes its appearance, as well as the frequency and exact location of the headache. These cards have been in use but two months and if you are interested a year hence, we will be able to give you some accurate statements and statistics in regard to this much complained of symptom.

We are acquiring the habit of referring our patients to the internist, neurologist, gynecologist, rhinologist and dental surgeon when we fail to alleviate the symptom or if we have any doubt whatever as to a contributing cause. We are but carrying out the ultra-scientific method in medicine of "group diagnosis" which was so indelibly impressed upon us during our service in the army.

The predisposing causes of ocular headaches are lowered general physical and mental conditions, insomnia, dyspepsia, excess in eating, etc. The exciting causes are continuous near work and the continued use of the muscles of accommodation and convergence.

The site of ocular headaches may be, in order of frequency, supra-orbital, deep orbital, frontal, occipital and temporal. Bilateral as a rule. We can usually exclude the eyes when the patient complains of unilateral supra-orbital headache or hemicrania of any kind.

Time of appearance during the day is usually after excessive near work—"No O. S. No O. H.." —No ocular strain, no ocular headache. A term known only to the wets may aptly apply to the ocular headache that appears in the afternoon and remains all night, to be in evidence again in the morning—a socalled "hang-over" occurs especially in cases of heterophoria or ocular muscular imbalance.

The refractive errors responsible in order of importance are: First, astigmatism (due to an irregularity in the curvature of the cornea or lens, or both, but usually the former; second, hypermetropia, or far-sightedness (an eye that is less than 25 M. M. in length, and which allows the rays of light to focus behind the retina). Myopia or near sightedness (where the eye exceeds the normal 25 M. M. in length) does not bring about ocular headaches unless there is astigmatism in addition to the myopia.

Usually the patient with the best vision in the distance, sometimes better than normal, is the most frequent sufferer from headaches, ocular in origin. We obtain a history of aggravation of the symptom whenever on a moving train or car or after attending a movie. The lines and letters in the newspaper blur and run together, the lids burn, smart and itch. Upon examination the conjuctiva and frequently the retina is hyperemic.

Errors of refraction were recognized by the Greeks and Egyptians, but only as diminished vision. The American and English writers deserve a large part of the credit for having connected refractive errors with reflex neuroses. Dr. William Thompson in 1879 in his paper entitled "Astigmatism as a cause for persistent headaches and other nervous symptoms" tried to rectify these obscure cases of headache by the correction of ocular errors.

Eye strain was described in the 17th and 18th centuries, but the refractive errors were not recognized until Donders in 1858 wrote his "Anomalies of Refraction and Accommodation." The earlier writers recognized a true squint but it remained for Von Graefe to describe an insufficiency of the muscles, a tendency of the eyes to turn either in or out, up or down.

S. Weir Mitchell, in the early seventies, stirred the profession by his writings on this subject. Today, in any case of chronic headache, where the cause is not found, the state of refraction and muscular balance should be investigated.

The state of imbalance or relative difference in power of the various extra ocular muscles is the other condition in the eyes which produces chronic headaches.

If we look into the anatomy and physiology of but one eye, with no reference to its fellow, we are impressed with the complexity of its possible movements and the diverse innervation of the ocular muscles. If one eye is complex, the two considered together are many times more than doubly so. The associated movements of the eyes is one of the most beautiful instances of correlated action in our economy. It is not difficult to see that if one muscle lags behind or oversteps its associated fellow, an extra nerve stimulus will be required in order to obtain parallel motion of the

two eyes. This is just the condition which confronts us here.

A typical divergence or convergence of the eyes that is a strabismus, does not necessarily cause the patient any reflex neurosis, as the eye which deviates will in time either diminish in sight or become practically blind, thus being disregarded and not taken into account. Such a patient has only monocular sight, but no pain. It is the latent errors, which do not show as squint, which cause the trouble. Hence a more careful examination of the muscular apparatus both in regard to the individual motility and strength, and in regard to its associations to the fellow eye, is always indicated in the complete examination of the eyes.

The efforts of the intrinsic (ciliary—within the eye-ball) and extrinsic muscles (six on either eye) to bring about normal vision in abnormal states of refraction irritate the nuclei of the third nerve and center for trigeminus with its endings on forehead.

Heterophoria is a conditoin of latent deviation of the extrinsic eye muscles, as opposed to orthophoria or perfect balance of all external eye muscles. In the former there is a tendency to abnormal rotation of the eyeball in some one direction. Both eyes together look in the proper direction only by the exercise of constant effort, this being due to a particular muscle being too short or too long—too much or too little developed or imperfectly or unduly innervated as compared with its antagonist or fellow muscle.

The varieties of heterophoria are:

(a) Esophoria, a latent tendency of the visual axis to swing inward.

(b) Exophoria, a latent tendency of the visual axis to swing outward.

(c) Hyperphoria, a latent tendency of one axis to deviate below that of the other.

Location of headache in this condition may be any portion of cranium, but usually in the occipital region. Pain follows use of eyes, but may remain during the night or reappear again on awakening.

DIFFERENTIAL DIAGNOSIS.

1. Iritis, glaucoma and acute diseases of the eye, present definite findings and are easily recognized by the ophthalmologist.

2. Supra orbital unilateral headache may be due to:

(a) Nasal catarrh.

(b) Frontal sinusitis, chronic, diagnosed by the X-ray and transillumination.

3. Frontal headache may be due to:

(a) Hypertrophic rhinitis.

(b) Deviated septum.

(c) Frontal sinusitis (mucous or purulent) characterized by being continuous after a few hours exercise in the upright position.

4. Supra orbital neuralgia:

Diagnosed by its periodicity—tenderness at notch, unilateral pain along course of nerve; with no asthenopic symptoms.

5. Migraine:

Our experience has shown that no relief is obtained by the use of lenses unless there is present some error of refraction or muscular imbalance, when the corrective for these brings about some degree of alleviation.

TREATMENT OF OCULAR HEADACHE.

The estimation of the refraction is usually poorly done and I dare say only 25% of all cases (if we except presbyopia) are properly refracted. Most oculists consider the work as tedious and uninteresting, hence the optician or optometrist and department stores attract more patients than the profession.

An eye having but a small error of refraction will accommodate itself to any condition and see perfectly, and generaly these are the cases that produce the neuroses. If the error is large, nature cannot overcome this deficiency and the patient does not overtax the eye. He suffers from loss of sight but has no reflex neuroses and is easily converted to the use of lenses.

Ophthalmologists are agreed that small errors cannot be detected without a mydriatic. Atropin is usually employed when the patient is under 15 years of age and homotropine is used in patients older.

The trial case testing, or placing different lenses before the eyes, is not alone sufficient to bring out small refractive errors and it is necessary to resort to retinoscopy or the shadow test.

It is very important to consider the general condition of the patient and to give him the benefit of all our knowledge of rational therapeutics and it is incumbent upon the oculist to refer his cases to the internist, gynecologist, neurologist, rhinologist or dental surgeon—as the case may

require—if there is any doubt in his mind of any other source of the complaint or any contributing cause.

In astigmatism, even in a very low degree, the constant use of cylindrical lenses acts frequently in a magical manner.

In hypermetropia convex lenses overcome the excessive strain on the ciliary muscles and eliminates the blurring at close range, and clears up the headache as a rule.

The eyes are the most used and most abused of the special organs; in fact the mere presence of light and its interpretation means work for the eyes. The retinae during our working hours are constantly in use.

The focusing of the eyes on near objects is artificial. Our eyes were never intended for the amount of near work that the present civilization requires of them. The savage looks in the distance for his foe and food and does not use artificial light, hence his freedom from ocular troubles.

Myopia (near-sightedness) is purely of artificial production. All babies are born with the eyes hyperopic. When the eyes are used in early education or if any anomalous condition of the ocular muscles exists in relation to the eye or the orbit, the distortion of their shape begins and astigmatism and refractive errors are formed.

The above conditions can be remedied and prove the prescribing of lenses as the most exact therapeutic remedy in the realm of medicine. Therefore, we obey that impulse and "Say It With Lenses."

If headaches are due to the eyes, the mere wearing of lenses will not immediately cause a cessation of pain. The patient must learn to relax his abused muscles and allow the glasses to do the extra work. As this is not likely, and especially if the lenses prescribed are the full amount of the error, it is usually not possible to judge of the result for two, three or possibly six weeks.

Added to the wearing of the correction, the patient must rest his eyes frequently, and closing them a number of times during the day, if only for five minutes at a time, is more beneficial than one long period of rest.

In resumé, I may say that with the exception of those few cases in which the headache is palpably connected with the use of the eyes, the only way possible to find if the eyes are the cause of the trouble is through the therapeutic test of wearing proper correcting lenses.

We must beware of assuming an ocular cause in grave central or other origin and we must urge a searching diagnostic interpretation or bring discredit upon effective diagnosis. A careful refraction and measurement of the oculo muscular error with the constant wearing of proper lenses will frequently prove to be a most effective measure of curing or relieving a well defined class of headaches.

Specialism in medicine has been accused—too often truthfully so—of seeing only its own side of the subject, and the oculist is no exception to the rule. Therefore, let us in our attacks on the symptom headache profit by the example of the spider who uses all of his legs in his daily work, for we—like him—cannot go far on one leg.

MY EXPERIENCE AS AN ARMY SURGEON.*

BY THOMAS W. NUZUM, M. D.,
JANESVILLE, WIS.

In June, when the sky was ominous and it became more and more apparent that the U. S. A. would be compelled to defend her sacred rights with other civilized nations, I felt it the duty of every man of proper age and physique to offer his services to our great country and since I advocated and advised my fellow doctors to make the sacrifice, I felt it my duty to do that which I had urged upon others. I therefore offered my services to the government and received a commission as first lieutenant, M. R. C. Dr. Pember, my partner, did likewise and received a like commission. Later we were asked how long it would require to arrange business affairs and expected daily to receive orders. Some weeks passed, when we were notified that because we were over the age limit, viz: 55 years, we would not be called.

In June, 1918, when things looked very dark for the Allies, I received orders to report at Ft. Sheridan for duty, and upon arrival was assigned to the surgical service under Capt. Riordan, and two weeks later was made "surgeon in charge," which place I held for four months. Our post surgeon was Major Proxmire, a most excellent and able man.

As you will remember, during the winter and spring of 1918, a premium was placed on those who had held off and captaincies were given out

*Read before the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 1st, 1919.

most freely and many men with no special fitness for any line of work were rushed in, put to work with no training nor instruction as to what was required of them.

Only those who have been in the service can realize what *rank* means in the army. The great majority chose the surgical service and expected to practice on the boys, and experience, ability, and fitness counted for little; the man who outranked you either shoved you aside or made it very unpleasant, and the man with a "pull" was advanced in rank, while others more deserving remained where they started. The arrogance of *some* line officers could scarcely be excelled by that of the Kaiser himself and was most disgusting to one of democratic tastes. They treated privates with utmost contempt and the officers in the M. C. with little, if any more consideration. And, it seemed the more autocratic the officer the more certain was he of promotion.

This may be desirable and work well in the German army where the rank and file know nothing but to obey orders, but, I assure you, with our army of educated, reading, thinking men, it is much more easy to obey orders from a man who has something in his head and does not depend wholly on his shoulder straps to recommend him.

Ft. Sheridan was a rounding up and sorting out place. We were ordered there from private life in large numbers, picked up what we could from observation, no lectures, nor instructions, and sent out from time to time where there was a call for men. Now this would do very well were we not expected or required to make all communications through "military channels" of which we were entirely ignorant.

At this place no instructions were given as to history taking or record keeping, and as a great majority of doctors that came in had never had any hospital experience you can well imagine the character of the work done along this line.

At Camp Custer they went to the opposite extreme, especially on record keeping, and the minutest detail of the daily condition of each patient was recorded, which seemed to me a waste of valuable time in chronic or long drawn out cases.

Medical Nihilism seemed rampant at Camp Custer. I think we must admit medicines were very impotent in combating those fulminating cases of pneumonia following influenza; but can any one doubt the efficiency of opium for pain, quinine in malaria, mercury for syphilis, antitoxin for diphtheria, vaccination for prevention of smallpox, typhoid, etc., and yet I have met such. Now, I am a firm believer in the value of medicine, and believe our skepticism is due to our lack of knowledge of how and when to use these potent medicines to accomplish the best results; but, granting they are of no real benefit, is not the fact that the patient is taking no medicine after being taught all his life that medicines were valuable aids, depressing and injurious? Is not the patient's mental state most potent in influencing the progress of his case? To illustrate—parents came to be with their very ill sons and noted the fact that they received practically no medicines. A complaint went in to Washington and our commander, Colonel Irons, suggested medicine be given even for the mental effect, yet no change was made during my stay at the camp. Nor were we left to use our judgment as when we ordered medicines the orders were reversed.

In the treatment of empyemas, irrigations with Dakin's solution must be made every two hours and the results or progress of the cases were anything but brilliant. In the beginning empyemas were operated early with a death rate of from 40 to 82%, later reduced to 6% by waiting from ten days to three weeks before operating.

In private practice is it not a rare thing for empyemas to prove fatal, barring old neglected cases, tubercular and lung abscesses? And do these not drag along for an indefinite period?

I questioned a number of my fellow medical officers of various rank, who were men of large experience and good judgment to know what their conclusions were concerning army efficiency, of medical men in general, and found none that would choose to be operated or treated in camp, nor would they have their sons treated or operated there, had they a choice.

It is easy and requires no large amount of gray matter to criticize, and when one sees faults they should offer some solution for the difficulty.

Do I believe in a large standing army?

Decidedly not. I think it both unnecessary and undesirable. My reasons follow:

1. Long service in the army tends to lessen one's ambition and energy because he must obey orders right or wrong, and, he occupies somewhat the position of the hireling and soon does just enough to get by. The opportunity and incentive to climb are largely removed.

2. With a nation of educated and thinking young men, a long course of training is not required to make of them efficient fighting men.

3. The emoluments are not sufficient to attract men of the best ability; this, as well as the Civil and Spanish wars have demonstrated, that all who are worthy to be American citizens are ready to answer their country's call at all times.

I think we may well model after the Swiss in this matter, viz., train all boys between 18 and 21 years of age for three months each summer at the various army camps, of which we now have an abundance, and pay them—say one dollar per day for their time. Keep only an army and navy sufficient in size to police our country and sufficient officers to train the young men and lead them, in case of need.

The advantages of such a method to me are obvious:

1. The physical condition of our young manhood would be immensely improved.

2. They would be taught discipline, regular habits, the effects of disease and dangers of exposure.

3. They would not be broken up in their school and college courses, which is a most serious handicap for any young man, and a calamity to many.

4. We would always have a large and most efficient army, that could be mobilized with the least possible delay and it would automatically expand until in a few years all able-bodied men from 18 to 40 would be trained and available.

5. This can be done with a minimum of expense and what nation could ask for a better guaranty of her safety?

As to the M. C. I would suggest a strict *service efficiency record* of all who have been in the service, to be kept and those most desirable be induced to join the M. R. C. with a rank in keeping with deserts.

That all men entering the M. R. C. be commissioned first lieutenants and receive advancement, not through political or other pull, but on his merits. In other words every man be given a square deal. We can thus have a M. R. C. ready at any time for active duty which cannot be excelled.

And, now the most important thing both to medical men and the people is that we unite, organize and pull together, to combat this nefarious legislation, both state and national, which is put over on us more and more, and if continued, will ultimately result in state medicine. Then men of brains and ability will no longer find in medicine and surgery a proper field for their energies. This will result in dire consequence both to the public and our loved profession.

When I viewed the throng of medical men and women at Atlantic City recently, I thought what a mighty force they could exert all over this country, if they would organize as American citizens and take a more active part in politics and not leave it all to professional politicians and lawyers.

DISCUSSION.

Lt. Col. J. W. Frew: I wish to compliment the last speaker on his stand on universal military training. There is not any necessity for a large standing army in this country. There is no question in my mind at all but what that is absolutely correct. There is no reason at all why this country should support a large standing army, for the results that would be obtained in military efficiency, will never justify the expense. The past great war rather proved the reverse; proved that the trained citizen soldier is the best that can be made. I happen to know pretty well the basic facts along this line, as most of the American fighting forces in France came under my jurisdiction at various times during my service there, and I have no hesitancy at all in making this statement. The regular army had in France eight divisions, and I had every one of these divisions at one time or another under my jurisdiction. Let me enumerate, the First, Second and Third Divisions were good divisions; good fighting forces. The Fourth, Fifth and Sixth were poor, and far below the standard of the average American units. The Seventh was only long enough in action to receive 179 casualties, and the Eighth never saw any action at all. Now, then, compare that record with the record of the National Guard and the drafted troops, and the facts will substantiate the position that I take as to what universal military training will do for us in the future.

You can take the National Guard numbered from the Twenty-sixth to the Forty-second, and they all made good. The Twenty-sixth, the New England Division made a wonderful record; the Twenty-seventh, the Twenty-ninth, the Thirtieth fought with the British and did well; the Thirty-second, the Thirty-fifth, the Thirty-seventh, the Thirty-ninth and the Forty-second made records that stand second to none; all National Guard troops. Go still further, and take the Seventy-eighth, the Seventy-ninth, the Eighty-first, the Eighty-second, the Ninetieth, and in fact all the other draft divisions that went into line without any preliminary training whatever and their record shows what a citizen army can do. When they arrived in France, we were in dire straights and needed men, and those divisions were put into the front line without any preliminary training, and inside of two weeks were just as good as the veterans, and much better than the regular army, with the exception of the three divisions that I have enumerated. There is no question at all

but that the future military policy of this country should be universal military training, after the Swiss method, or something akin to it. All young men should be trained to be soldiers, and it would only take a very short time, in case of war, to bring these men into action, and they will make first class soldiers; much better soldiers than the regular army can produce. I heartily support the statement that the last speaker has just made in that regard. Now, loafers will never make good soldiers. This point is well illustrated by the differences in the fighting qualities of the forces in France, after a comparison between the regular army and the civilian army. As the last speaker has just said the one is a mental loafer, who is trained to have all his thinking done for him; he is merely a hired man, and he naturally soon loses all power of initiative, whereas the civilian soldier retains that quality, and he is therefore, a much better man, either as a soldier or as a civilian. I am heartily in accord with the statements made by the last speaker regarding the future military policy of this country. (Applause.)

DR. C. C. LAWHORN: May I say a few words. I want to say for the benefit of the members of the First Division, that those men were not all regular army men by any means. They didn't have the training, because I was with them when they started; nearly every old man that we had had been taken out; they were taken out of the division and taken away; and those men who were in there, in the First Division, were men that came from Camp Grant, Camp Sheridan and Jefferson Barracks at St. Louis, and Ft. Slocum, New York, and in reference to the older men or veterans we had made officers of a lot of them, and scattered them all over the country. Those men who came in there were new men, men who volunteered when the war started; those fellows that came down there were brand new men, and the men who composed the First, Second and Third, they were only a very few men originally who were old army men, and I want to say right here that it was the new men who did the work as organizations, not the old men; they didn't have any old men; the old men were scattered all over the whole army. The army had to do that; as soon as war starts out, you have to sort them all out over the whole country, and used to train the non-commissioned and commissioned officers. The First, Second and Third Divisions were not veteran regular army men; they were new men in regular organizations, new organizations, volunteers; they were trained, given a couple of months training and sent over. They were new men and did the work just as well as the best men of Germany or England or any other country.

(Applause.)

DR. D. R. CONNELL, Beloit, Wisconsin: I would not like to let those excellent papers go by without saying something about them. I really think they are the most practical papers that I have heard for a long time.

This is something that I could never understand. When the war broke out a lot of men wanted to go, among them myself, and I cannot see yet why I was rejected. I was well able to work and could do a whole lot of work, such as it is, and I tried here in Milwaukee and I tried in Beloit, and yet I could not get in. I happened to do work at the cantonment at Beloit, so I know pretty well what I am talking about. It strikes me if we ever have another war, which I hope we don't, that there should be some other way of securing medical men for the medical care of these sick boys. A man would not necessarily have to be able to climb a telegraph pole, or ride a broncho, if he is otherwise well. You take Dr. Nuzum and some other doctors, they are quite active on their feet, and have had a great experience, and have seen hard service, and I think there ought to be something done to get these men in that have had this experience. They ought to be put into work along their own line, such as they had a reputation for at home. Now for instance, an internal medicine man could do internal medicine, while a surgeon, of course, would work in a surgical ward. Now, you know that Doctor Nuzum would be all right in taking care of a ward of sick soldiers, medical or surgical, but he could hardly get in on account of his age, and I think the medical profession ought to make it known that there should be some other way besides these physical tests in determining the fitness of a man to go into the army. Whether they had doctors enough or whether they didn't have doctors enough I don't know. In the epidemic last year the soldiers got a pretty raw deal. It seemed as though there must have been something wrong with the treatment the soldiers of this country received. I thank you.

(Applause.)

THE AMERICAN ARMY IN THE LAST GERMAN DRIVE.*

BY J. W. FREW, LT. COL., M. C.,
MILWAUKEE.

There are two great military axioms, that have been recognized ever since war was a science, and both of them were involved in the great action that took place in France between March 21st and July 18th, 1918. These are:

1. An army continuously on the defensive, can never win a war.

2. The most delicate and dangerous manoeuver of war is, to change from a defensive or retreating action to an offensive one.

You are all more or less familiar with the history of the valor and success of the American Army, from the beginning of the great Allied offensive on July 18th, 1918, to the signing of the armistice on November 11th, 1918, but very few know of the brave stand of the small American

*Read before the Surgical Section, State Medical Society of Wisconsin, Milwaukee, Oct. 2, 1919.

force that fought in France, during those perilous days, from March 21st to July 18th; America's First One Hundred Thousand.

After the first great German drive in 1914, which ended by their defeat in the first battle of the Marne, both sides settled down to trench warfare. The line to be held, extending from the North Sea to Switzerland, was so long that neither side could spare sufficient reserves to exploit any local gains, so it just settled down to a war of exhaustion.

In the spring of 1918 this condition was changed for Germany. Russia had collapsed, and the greater part of their forces on that front, together with some from Italy, and the Balkans, were rushed to the western battle line. By March she had such a numerical superiority in this theater, that she was justified in the belief, that the time had come to make her greatest drive, and end the war in her favor, by conquest.

This drive was made in three great thrusts, with short pauses between, for rest and replenishment of men and ammunition. The first thrust was against the British in Picardy, on March 21st; the second against the French and Americans in the Vesle sector, on May 27th, and the third was against the French and Americans in the Champaign sector on July 14.

The battle line of this whole front was roughly a great quadrant, with the Germans on the concave side. This gave them a tremendous initial advantage, as it was possible to hold great masses of reserves near the center, and to throw them into any sector, in a comparatively short time, while the Allies on the convex side of the line, were obliged to transport men long distances, to meet these thrusts.

Although the Allies knew that a drive was coming, still on March 21st, when the Germans struck in Picardy, with three armies, the blow was so great, that the British army staggered back, on its whole 45 mile front, except in the Cambrai sector, held by Gen. Byng. Back they went, until the city of Ameins, their base, was brought under gunfire. Reinforcements, both British and French, were rushed in, and on April 4th, this part of the drive stopped, not because the Germans were beaten, but because rapid advance being necessary to their plans, they could not afford to engage in a battle of exhaustion at this time. They had taken the offensive, and meant to hold it, thus living up to the first military axiom, and forcing the allies to accomplish the second, and most dangerous one, if they ever expected to win.

On March 27th Gen. Pershing offered to Marshall Foch, all of the trained American troops under his command. This consisted of but five divisions, the First, Second, Third, Twenty-sixth and Forty-second. These were accepted and were thrown in at vital points, to help stop the victorious German rush. Placed in lines that were everywhere falling back, the greatest thing that can be said of these Americans is, "they never took a backward step." The First and Second were called first, and hurried to the Montdidier sector, where the First took the front line on April 26th, with the Second in reserve. There they held their ground, under constant fire for a month, and then on May 28th to the consternation of the enemy, these men piled out of their trenches, in a vicious attack, captured the town of Cantigny and successfully held it against repeated furious counter-attacks and galling artillery fire.

The second thrust of the drive had started on May 27th, and the French fell back with terrifying rapidity toward the Marne. Paris now appeared to be in real danger, and all available reserves were massed between Chateau Thierry and the capitol. When Chateau Thierry fell, and German troops even crossed the Marne, consternation reigned, and although the French staff expressed confidence in the outcome, still the fact remains, that the French army was standing in the last ditch, with its back to the walls of Paris. Two American divisions, the Second and the Third, were thrown in, to do their part in checking this frightful advance, and they both wrote military history with an American pen. The Second which had been in reserve opposite Cantigny, was rushed down in motor trucks, and they made the same interpretation of the word "defense" as did the First Division. Instead of fortifying itself and acting as receiver for German fire, this division immediately attacked and captured the railroad town of Bouresches, and held it, against the enemy's best guard divisions. Their fighting spirit was shown when 250 Marines charged across an open wheat field, in the face of heavy machine gun fire, and although 230 of them fell in the field, the remaining 20 smashed into Bouresches and took 300 prisoners. Then this same division cleaned out the strongly held Belleau Wood in a vicious fight, and on July 1st, just before they were relieved, they took the town of Vaux. In this series

of engagements, they had 7,000 casualties, not one of whom was a prisoner to the enemy. The Third Division in the meantime, had been ordered to the south bank of the Marne opposite Chateau Thierry, and their machine gun battalions successfully held the bridge heads, while the rest of the division deployed eastward along the river.

The third and last thrust commenced just before midnight on July 14th, on a front of 85 miles, in the Champaign sector. Its object was the capture of Rheims and Chalons, in order to widen the dangerous Chateau Thierry salient. Gen. Gourand, in command east of Rheims, knew from captured orders, the full details of the attack, and the whole line was strengthened, in the determination to hold to the last man.

The Forty-second Division (Rainbow) fresh from ten weeks of trench warfare in the Voges sector, was placed near the center of this line directly north of Chalons, and the Third was already in position south of the Marne, east of Chateau Thierry. Gen. Gourand, knowing that the preliminary German barrage would begin at 11:55 P. M., drew all his forces back to the second line of trenches, under cover of darkness, to save them from this preliminary fire. He also started his counter fire at 11:40 P. M., fifteen minutes before the scheduled German attack. The artillery fire from both sides was frightful beyond description and continued at maximum intensity until 4 A. M., when the German infantry came out of their trenches, and charged in wave after wave of men. They rushed across no man's land, and were broken, scattered and crushed by the intensity of the allied fire. Some conception of the ferocity of this fighting can be gained from the fact, that although they had only about 400 yards to go, and the advance started at 4 A. M., it was 7 A. M. before any of them reached our lines. Hand to hand, they fought, the German line swaying backward and forward, but gradually becoming weaker. By 2 P. M. on the 15th their defeat was forecast, and by noon of the 16th it was established. On the 17th, all the attacking forces were withdrawn to their own trenches, completely defeated.

During this same period the Third Division, south of the Marne, was also showing what American soldiers could do in extreme combat. They were in line with French units on both sides of them, and when the Germans rushed down the north bank, and crossed the river, the French fell back, thus exposing both flanks of the American forces. In spite of this, they refused to retreat, but instead, bent their flanks backward, and held their ground in the form of a great wedge, firing in three directions, east, west and north. In this precarious position, Maj. Rowe, in command at the apex of the wedge, sent this message back to headquarters: "We are holding this line, and can do so indefinitely." They later drove the Germans back across the river, and held their position, until they advanced themselves in the Allied offensive of July 18th.

The great German drive was stopped, and crushed, and the Allied counter offensive of July 18th was made possible.

Please do not infer that I ascribe the stopping of the great drive to the American troops. They only did their small part, but the manner in which they did it, had an electrical moral effect on both friend and foe. The Allies knew then, that a real fighting force had come to their aid, and the fighting men of Germany knew from bitter experience, that their staff had misinformed them, when they said that the American army was a uniformed rabble, who could not fight, and who would never be a factor in the war.

SODIUM GYNOCARDATE "A" IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

Sodium gynocardate "A" is a salt of chaulmoogra oil. It has recently been suggested as a possible remedy for tuberculosis. M. Biesenthal of Chicago has recently employed it in treating ten patients at the County Hospital and the Chicago Winfield Sanatorium. Not a single patient showed any improvement or signs or symptoms and there were no sputum changes from positive to negative. In two cases acute reactions followed the injections.

Biesenthal, Max: The use of Sodium Gynocardate "A" in Pulmonary Tuberculosis. American Review of Tuberculosis, April 1920, vol. IV. No. 2.

CONSERVATION OF MENSTRUAL FUNCTION.

W. J. Mayo, Rochester, Minn. (*Journal A. M. A.*, June 19, 1920), urges that conservation of menstrual function is of the utmost importance even if pregnancy is not possible, and that the surgeon who faces the necessity of removing the uterus or the ovaries, and the bringing about of all those endocrine changes attending the procedure, is taking a serious responsibility which must not be assumed lightly. The heredity of the patient is responsible for the nervous instability, but the operation may be the match which lights a fire, in the ashes of which the patient finds herself unable to readjust her life to her living condition.

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EDITORIALS

DOCTOR SEAMAN FOR GOVERNOR.

EVERY physician in Wisconsin will be interested in the candidacy of Dr. Gilbert E. Seaman of Milwaukee for the Republican nomination for Governor. It will appeal to him as a medical man, but more will it appeal to him as a good citizen interested in the right sort of government.

We have stood back and found fault with the work done at Madison, and have witnessed time and again the passage of legislation on medical and public health matters which made us in our disgust wish more medical men would make the sacrifice and enter public life. In other countries, the most distinguished members of the profession have been members of law-making bodies. Unfortunately, in our own a certain degree of reproach has at times rested upon men in political activities, but this should not be so, and would not be if more men of Dr. Seaman's type would accept the duties plainly resting upon them.

Never has there been so great a need of active, trained physicians in public life. For years we have been approaching conditions which thoughtful people have viewed with alarm and now the war and the post-war unrest have precipitated them. The next legislature may be radical to a considerable degree and it is important that a progressive man be in the executive office.

Dr. Seaman needs no introduction to the medical profession of the State. He has been an active practitioner in Wisconsin since 1893 and is an ex-president of the State Medical Society. He served his country with distinction through the Spanish-American War and as Surgeon in Charge of the Thirty-second Division during the World War. As a recognition of his splendid work and executive ability, he was promoted to the grade of Colonel and Chief Surgeon of the Sixth Army Corps. For years, Dr. Seaman was Surgeon General of the Wisconsin National Guard. For years, he has given generously of his time and efforts as a Regent of the University of Wisconsin. For two years, he has been on the State Board of Education and for eight years was assistant commissioner of health at Milwaukee. No man has given more of his life for his country and for his state. He has earned this recognition and is qualified for this important position as no other candidate is.

The *Journal* does not interfere in politics but Dr. Seaman is not a politician. Representative men sensing the seriousness of the times have urged him to accept the responsibility and enter the field. The physicians of the State are confronted by a responsibility of citizenship and an opportunity to elect a member of their profession as governor. No class of men has greater influence in each community. If each will approach his friends before the primary and tell them what he *knows* of Dr. Seaman, there can be no doubt of the outcome. He needs this help from his profession as the other candidates for the office are better known to the public—each having been a candidate for office two years ago when he was in France.

TRANSIENT CHEST CLINICS.

PERHAPS the greatest ally of the tubercle bacillus in overwhelming his host is the very human characteristic of that host to turn tail and run from unpleasant truths. Every doctor realizes this but until recent times, he has been, to a considerable degree, impotent to get an infection because of the defense thrown around the focus of disease by the psychology of the patient.

The transient chest clinics conducted by the Wisconsin Anti-Tuberculosis Association are designed to combat the psychology of the "presumptive" or incipient consumptive, far more than they are to combat the infection itself. The latter cannot be treated by an itinerant. Frequently, it can not be diagnosed by a transient consultant—no matter how skillful he may be, in the time limit imposed by the nature of the clinic.

In sending its clinic physicians to communities the Association does so not with the primary idea that these men are necessarily better qualified diagnosticians than the local practitioners, although it has secured the best examiners it can. Its primary objective is to make a gap through the wall which masks the batteries of the disease itself.

If the patient is deterred from receiving an early diagnosis by his tendency to procrastinate, it has seemed to us that the very fleeting character of the transient clinic ("here today and away tomorrow") would bring him out into the open and under the eyes, ears, and fingers of medical skill.

When this has been done the chief contribution of the transient clinic has been made. It then remains for the local family physicians to determine—so far as it is ever possible—whether that victim shall stay out of his shell and get his chance of care or if he shall be permitted to return to it again and furnish food for the tubercle bacilli.

According to the best scientific light of the day, tuberculosis is most frequently acquired in early childhood. With the disease as extensive as it is probably all persons are exposed and hence infected to a greater or lesser degree at one time or another.

This fact has led toward a reactionary attitude on the part of some in respect to the importance of erecting safeguards at the avenues of infection. If we know anything, however, about infections and immunity it is this—that massive doses of infective organisms like any other poisons are quite likely to overwhelm the subject, whereas small doses have the tendency to produce tolerance or immunity, and while tuberculosis is unlike the acute processes in which the effects of vaccines and sera are so manifest as to preclude question still we have no right to assume that tuberculosis is exempt from the rules governing other infectious diseases.

No one with sense would propose radical treatment of all persons who have acquired a tuberculous infection. On the other hand, no one with sense will go to the other extreme of ignoring the importance of infection in a disease which still causes one in ten of all deaths.

Common sense and scientific reason demand that a middle ground be taken. This ground must be maintained against the radical faddists who see tuberculosis everywhere and the radical standpatters who see it nowhere until after it has knocked them down. The middle ground offers to private practitioners of medicine, furthermore, an opportunity to practice "preventive medicine" in a sense and manner which is nowise in conflict with so-called "curative medicine."

Every person who has been exposed to frequently repeated doses of tuberculosis bacilli—and this includes every child of frankly tuberculous parents, should be considered as a potential victim of tuberculous *disease* which may overwhelm him. It is the duty of the family physician to treat that person, not as a consumptive, but as a child is trained and educated in preparation for life. In brief, some one should see to it that his strength and powers of resistance are built up as carefully as are those of a football player for the shocks and hazards to which that game exposes him. This someone should, of course, be a physician.

If, and at the moment that, subjective symptoms (loss of weight, unwarrantable fatigue, indigestion, rapid pulse, etc.) become manifest the patient should become a resident of a sanatorium and for a sufficiently long period to insure as complete as possible restoration of compensation between personal resistance and tuberculous infection. It is obvious that unless the patient is under reasonable constant observation the moment that his *infection* becomes *disease* will pass unnoticed.

H. E. D.

RESULTS OF EXPOSURE OF ANIMAL OVARIES TO RADIUM.

Experiments on rabbits have convinced John M. Maury, Memphis, Tenn. (*Journal A. M. A.*, June 19, 1920), that a 600 mg. hour dosage of radium does not produce degeneration of the follicles of the ovaries.

THE 1920 MEETING OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

THE 1920 meeting of the State Medical Society of Wisconsin will be held in La Crosse, Wednesday, Thursday and Friday, September 8, 9 and 10. A splendid program has been prepared and the La Crosse physicians have promised entertainment features different from anything we have ever had and a hospitality seldom shown.

The general and section meetings and the commercial exhibit will all be housed in the beautiful new State Normal School and no place in the state outside of the Auditorium in Milwaukee offers better accommodations. Some changes have been made in the general plan of the meeting. There will be no sessions Wednesday morning and the House of Delegates will hold its first meeting at this time rather than Tuesday evening as has been the custom in the past. The general sessions will open Wednesday noon and continue through until Thursday night. Friday morning will be given over to section meetings and the afternoon to clinics at the La Crosse hospitals.

Many physicians are planning to make this week a part of their vacation period and motor through the beautiful country to La Crosse. It is sure to prove an interesting trip and an enjoyable and profitable vacation. All indications point to a large attendance and members are urged to write in for hotel reservations, though the program committee promises excellent care for everyone in attendance. The Milwaukee County Medical Society will plan to run sleepers from Milwaukee which will be side-tracked and used for their comfort while at the meeting.

Every member of the State Society should feel it his duty to attend these meetings and should make his plans now to attend. The meeting at La Crosse will give him an opportunity to meet physicians from the southern part of Minnesota and the northern part of Iowa as well as those at home.

The Journal is going to press nearly two months in advance of the meeting and it is impossible for us to print the completed program, but the following is given as an indication of the good things in store.

PRELIMINARY PROGRAM.

Wednesday, September 8, 9 A. M.

Meeting of the House of Delegates.

September 8, 2 P. M.

CHILDHOOD.

1. Foods in Relation to Growth of Child..... ..... Doctors J. Gurney Taylor and R. M. Hall, Milwaukee
2. The Rehabilitation of Undernourished Children.....Dr. J. P. Koehler, Milwaukee
3. The Nervous Child..... .....Dr. Smiley Blanton, Madison
4. Public Health Problems of Childhood and How They May Be Attacked..... .....Dr. C. A. Harper, Madison
5. Spasmophilia and Its Various Manifestations .....Dr. W. E. Bannen, La Crosse

September 8, 8 P. M.

Public Health Address. (Public Invited.).... Dr. V. V. Anderson, Medical Director, National Committee Mental Hygiene, New York City

September 9, 9 A. M.

SYMPOSIUM ON PNEUMONIA.

1. Anatomy of the Lungs and Its Relationship to Diseases ....Dr. W. S. Miller, University of Wisconsin
2. Pneumonia, A Communicable Disease..... .....Dr. G. C. Ruhland, Milwaukee
3. Treatment of Acute Respiratory Infections .....Dr. O. M. Layton, Fond du Lac
4. Clinical Aspects of Pneumonia..... .....Dr. L. F. Jermain, Milwaukee
5. Medical Oration.

September 9, 2 P. M.

1. Abdominal Symptoms in Pneumonia..... .....Dr. F. Gregory Connell, Oshkosh
2. The Pathology of Pneumonia as Found in the Recent Influenza Epidemic..... .....Dr. Daniel Hopkinson, Milwaukee, and Dr. E. L. Tharinger, Milwaukee
3. The Use of Stimulants in Pneumonia..... .....Dr. Louis M. Warfield, Milwaukee
4. Surgical Treatment in Complications of Pneumonia ....Dr. Wilson Cunningham, Platteville
5. Address on Surgery..... .....Dr. Dean Lewis, Chicago, Ill.

September 10, 9 A. M.

SURGICAL SECTION.

1. A Review of 300 Operations Upon the Biliary Tract.....Dr. C. J. Combs, Oshkosh

Symposium on Goitre.

2. Incidents of Goitre in Wisconsin with Suggestions as to Medical Management..... .....Dr. R. C. Blankinship, Madison
3. The Relationship Between the Pathology and Symptomatology of Goitre..... .....Dr. E. V. Smith, Fond du Lac
4. Indications for Surgical Intervention in Goitre.....Dr. S. J. Seeger, Milwaukee
5. Local Anaesthesia in Goitre Operations..... .....Dr. H. F. Derge, Eau Claire

PUBLIC HEALTH SECTION.

1. Inherited Syphilis... ....Dr. J. C. Sargent, Milwaukee
2. The Need of Maternity Service in Rural Districts.....Dr. C. M. Schmidt, Platteville
3. Prenatal Care—Its Importance and Prophylactic Value...Dr. C. Henry Davis, Milwaukee
4. Motherhood Among the Ancients..... .....Dr. Horace M. Brown, Milwaukee

EYE, EAR, NOSE AND THROAT SECTION.

1. The Eye Fundi in Pregnancy..... .....Dr. Nelson M. Black, Milwaukee
2. Refraction in School Children..... .....Dr. Joseph Bellin, Green Bay
3. Indications for Mastoid Operation in Children.....Dr. E. H. Brooks, Appleton
4. The Importance of Early Incision of the Tympanic Membrane in Acute Otitis Media with Profuse Exudate.Dr. L. P. Allen, Oshkosh

September 10, 2 P. M.

Clinics at La Crosse Hospitals. (To be announced later.)

ENTERTAINMENT.

For Thursday evening, the La Crosse County Medical Society has made arrangements for the best entertainment stunt we have ever had. A large Mississippi steamer has been chartered and will leave the Main Street dock at 5 P. M., returning at 11 P. M., and all members and their wives and families will be given a wonderful evening ride on the Mississippi. Dinner will be served and there will be music, dancing and other entertainment.

After the address of Dr. Anderson on Wednesday evening, a reception and dance will be given in the Normal School gymnasium. The La Crosse Country Club will be open to golf enthusiasts, and automobile rides, a reception at the Country Club and various other affairs have been planned for visiting ladies.

HOTELS.

To assist members in making advance arrangements for hotel accommodations, the following list of La Crosse hotels is printed, together with rates and capacity:

Stoddard Hotel (A)—100 beds—$3.25 to $5.00 per day.

La Crosse Hotel (E)—60 beds—$1.00 to $2.25 per day.

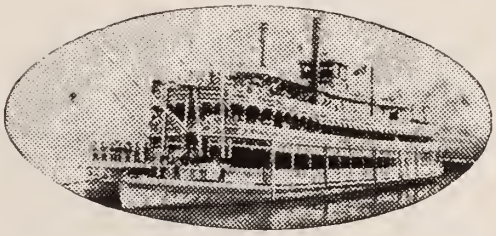
The Linker Hotel (E)—58 beds—$1.00 to $1.75 per day.

Jefferson Hotel (E)—60 beds—$1.25 to $1.75 per day.

Y. M. C. A.—30 beds.

LA CROSSE.

This year the State Medical Society will be the guest of La Crosse and something of the city will be of interest to those who will attend.



STEAMSHIP CHARTERED FOR THURSDAY'S ENTERTAINMENT

Splendidly located, the western gateway to one of the richest states in the Union, served by five

LA CROSSE COUNTRY CLUB

railroads, two of them direct trans-continental lines, with river transportation, with ideal living conditions, with metropolitan advantages, a city of homes and homebuilders, La Crosse is rich in natural advantages and in exceptional industrial facilities.

A brief survey of these conditions affords a convincing explanation of the consistent and steady progress of the 180 different industries located in La Crosse. With an annual output of approximately $20,000,000 and a pay roll of $4,000,000 distributed among over 5,000 contented employes, the products of these industries range from articles to supply the local demand to nationally and internationally advertised and trademarked goods.

The economic, educational, and social advantages in La Crosse afford anything and everything that the individual can ask in the way of profit and pleasure. The educational institutions are unsurpassed. There are many beautiful churches, an excellent library and a number of exceptionally good clubs for men and women. There are five local public service corporations, modern theaters, moving picture houses, garages, and modern retail and wholesale stores. The street railway system is thoroughly comprehensive and its equipment is of the latest type. There are 43.6 miles of paved streets and many beautiful parks and playgrounds. La Crosse is a well managed and well policed city, a city of happy and contented homes, and successful and progressive industries.

Situated in the heart of America, in the center of an agricultural district of great wealth, with tremendous natural resources and removed from the large financial centers, La Crosse is least affected by violent financial disturbances. It is a well known fact that reactions and commercial depressions are most acute in the great financial markets, and it has been observed that the cities in this favored section are least affected by panicky conditions.

La Crosse has at her command the service of two great trans-continental lines, the Chicago, Burlington & Quincy, and Chicago, Milwaukee & St. Paul roads, providing exceptional facilities for the shipment of through freight, as well as passenger service carrying the finest trains in operation. In addition to the trans-continental lines, the Chicago & Northwestern, La Crosse & South-Eastern and the Green Bay & Western furnish further means for the conveyance of traffic in every direction. The several roads give La Crosse a daily service of seventy-four passenger and sixty-seven freight trains.

STATE NORMAL SCHOOL, LA CROSSE
Place of Meeting

The Mississippi River is one of the important waterways of the United States. It affords an economical means of shipping freight as far north as St. Paul and south to the Gulf of Mexico. A new station for the handling of river freight has been built in this city within the past year. The government has made ample appropriation for the greater improvement of the river as a traffic route. The exceptional facilities for shipping by both rail and water afford obvious advantages which are fully appreciated by the manufacturer and wholesaler.

THE JOURNAL CLINIC

CLINIC OF THE UNIVERSITY OF WISCONSIN.

BY G. H. ROBBINS, M. D.,

CASE REPORT.

CASE 1. Mrs. J. S. M. Age 65. Present complaint: Frequency of urination and loss of weight and weakness; some burning on urination; backache. Patient states that she was in perfectly good health up to four months before she was first seen and at that time she noticed that she was beginning to urinate more frequently than normal and especially noticed that she would arise at night to urinate. Associated with this she complained of a gradually increasing tiredness and inability to do the usual amount of household work. These symptoms increased in severity up to the time when she was first seen and had been associated with considerable loss of weight. She states that she passed about one pint of urine during the day and one quart during the night. She was troubled with some nausea and anexoria; no cardiac distress or palpitation; noticed some shortness of breath on exertion; no cough.

Past medical history: Her past history is practically negative.

Family history: Her husband died of tabes dorsalis. No children.

Menstrual history: Negative.

Physical examination: Examination revealed:

Head and neck: Bagginess about the lower eyelids. Teeth in good condition. Otherwise negative.

Chest: Heart—upper border at third interspace; right border at the right sternal line; left border at the midclavicular line. Heart tones normal except for some accentuation of the first apical and second aortic; no murmurs.

Lungs: Show a few moist rales at both bases posteriorly; otherwise negative.

Abdomen: Flaccid but reveals no masses or tenderness.

Extremities: Some varicose veins of legs; slight edema of ankles.

The course: The subsequent findings are as follows: Urine examination taken repeatedly revealed an albumin which is constantly present, in amounts varying from one to two grams per liter, per twenty-four hours; almost constantly a trace of indican and a few hyaline casts. In practically every specimen examined there were quite a large number of red blood cells and a somewhat smaller number of pus cells. Renal epithelium was fairly constantly present. The blood revealed in the first examination 73% hemoglobin, 4,640,000 red blood cells, 9,760 leucocytes. Four months later the hemoglobin was reduced to 60% while the red blood cell count was 2,480,000 and the leucocytes 15,000. The blood pressure when she was first seen was as follows: Systolic 168, diastolic 110, giving a pulse pressure of 58. Later the blood pressure had increased to a systolic of 190 and a diastolic of 118. At that time a phenolsulphonethalein renal test revealed an excretion of only 20% of the normal. The patient was at first considered to be an acute exacerbation of a chronic interstitial nephritis but later developments in the case tended to make a change in diagnosis.

About two months after she was first seen she developed a somewhat firm yet elastic swelling in the region of the right kidney. This swelling was at first almost imperceptible but gradually increased in size until it was larger than an orange and very definitely palpable. Associated with the development of this tumor mass the patient seemed to lose in weight and strength more rapidly than she had previously and because of the associated constant finding of blood and pus in the urine a diagnosis of a hypernephroma was made. About a month and a half or two months later the patient died. At postmortem the following findings were revealed:

Heart—Somewhat hypertrophied, otherwise negative.

Lungs—A definite edema especially of the lower lobes.

Stomach—A small benign mesenteric cyst.

Intestines, liver, pancreas and spleen normal.

Left kidney—Secondarily contracted kidney of a chronic interstitial nephritis.

Right kidney, pelvis and ureter markedly distended with pus. Parenchyma atrophied away (pyelonephrosis).

Bladder—A spongy mass at the opening of the right ureter into the bladder which upon microscopic examination proved to be an adenocarcinoma.

Uterus—Tubes and ovaries negative.

DISCUSSION.

Here we have a case of a chronic interstitial nephritis of a very high grade which was complicated by a pyelonephrosis due to a blocking off of the opening of the ureter into the bladder by a fungating carcinomatous growth and in which the diagnosis could have easily been made if the patient would have submitted to cystoscopic examination, but since she would not consent to it

the somewhat pardonable mistake of calling the condition a hypernephroma was made due to the fact that there was a constant finding of blood and pus in the urine, associated with a tumor mass in the region of one kidney, and all of the signs of cachexia, loss of weight, weakness, and progressive diminution in hemoglobin and red blood cells.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

VENEREAL DISEASES.

The campaign against venereal diseases in our state has aroused the interest of everyone. The problems arising in this campaign resolve themselves largely into two main groups; the pure medical aspect, and the educational work. The paper by Mr. Pray is an excellent treatise of how sex matters may be taught in a dignified and effective way. His paper holds much of interest for physicians. Every physician has many opportunities to be an effective teacher.

The paper of Miss Riley is a concise presentation of what the State Board of Health is doing, and contains much information which physicians in the state will be glad to have.

THE OPPORTUNITIES OF THE BIOLOGY TEACHER.

BY PERRY S. PRAY.

READ AT HEALTH CONGRESS, MILWAUKEE NORMAL SCHOOL, APRIL, 1919.

The problem of sex in relation to education is the most important which we are called upon to solve. There are two sources of sex instruction; one is the home and the other is the school. Up to the age of 6 the parent is the only person in a position to give this information. After the boy or girl enters school up to the age of 9 or 10 this information can be given by both parent and teacher. Of course at this time of life sex instruction consists in satisfying the child's natural curiosity with the truth told in a simple natural way, comparing the child with the common things which he or she knows about.

After the child reaches 8 or 9 years of age the parent no longer attempts to instruct the child but allows the teachers of the public schools, who are specialists in their line, to continue this work. It is their business to not only know their subject but of far more importance to know how to impart what they know to the child. This I believe is successfully carried on in our schools. Parents are not fitted either by information nor training to do this work. The thoughtful parent is of course always on the alert to watch the progress of the child and to aid in many ways. They no longer criticize the teacher because they realize that they have been trained to do their particular work.

If this is true of one phase of the child's education, then it is certainly true of all. In the past whatever real sex knowledge the young child has received has come from the parent, but even if the parent has understood the problem of the child, the instruction given has been done in the wrong way. Parents are willing but not knowing how to teach are at a serious disadvantage. The child is quick to perceive this and the value of the knowledge is lost. Parents must be taught to watch the education of the child in matters pertaining to sex as closely as its mathematical, historical, scientific, physical, hygienic, moral and religious education.

Sex education is just one kind of information among the many which every child must learn to become a desirable citizen. If the schools are responsible for the complete education of the child, then why omit perhaps, the most vital part of the child's education?

Wherever sex instruction has been tried the greatest fault has been to make such information stand out as more important and almost entirely apart from other kinds of information. As an example of this a parent here in Milwaukee wishing to give his boy the best knowledge possible took him to a physician and asked the physician to instruct him in sex matters. The physician was astonished. It was practically impossible to begin to talk sex problems with a boy who had no foundation whatever and apparently no desire for information. There must be a natural gateway into this subject. We have one kind of teacher fitted to teach mathematics, another to teach history, another physical training, etc., and we have the teacher of biology or life processes who has made the study of life in all its forms, its origin, its growth, its care and its application to man, the highest of all, his life's work. A teacher doing this from day to day and from year to year can naturally and without embarassment to himself or the child speak of problems of sex. Here

we have the basis, the foundation which seems simple to the boy or girl and does not cause them to think unduly about it.

It is in its own environment and is of no more importance at the time than a lesson in digestion. When a problem in a special subject comes up in the child's life, they come with it to the teacher; apparatus in electricity; problems in gardening and thousands of others. Do they ask their parents to help them? In the beginning yes, but to cover up a lack of knowledge the parent is nearly always *"too busy."* Finally the child ceases to ask. The good teacher is never too busy to be interested in all outside problems of his pupils. What is more *natural* then, if the proper foundation has been laid, than to take problems of hygiene and sex to the biology or physiology teacher?

Because of the knowledge of sex the biologist has produced fruits, grains, vegetables, flowers, horses, cows, swine, dogs, etc. Therefore if biology is the foundation of life why not use this information to improve human life. The fundamental thought in the mind of the true teacher of biology is the future welfare of the boy or girl. The lower forms of life are taught only as a *basis* or *foundation* to the life of the human being. Our aim must be to not only impart *knowledge* but to *inspire ideals* especially the *thought* of others. We must teach that sex is a vital, necessary, holy endowment of life, to be guarded and cared for, and not to think of it as something vicious, depraved and shameful. We must emphasize the *constructive* side of sex, *not* the *abnormal.* We must implant *qualities* such as manliness, womanliness, love, courtship, marriage, home, father, mother and family life into the minds of the boy or girl. These qualities are the *natural fruits* of sex. We must make them pure and noble. We must strive to secure *right thinking* and *acting* which will inhibit *wrong action.* Boys and girls are naturally clean and wholesome. They love the truth better than the untruth. They love to keep fit. The human race is endowed with chivalry, and we as teachers of life must encourage these qualities.

Thus far sex instruction is new and we are just making a beginning, but because we are not sure of the best methods we cannot afford to withhold sex instruction. We must correct our methods as we progress. A teacher to successfully teach the subject must be convinced of the necessity of such teaching and the possibility of success. The teacher must know something of the *impulses* which govern the child. The sex impulses and desires are natural and clean, but very *powerful.* Therefore they are very important. The teacher should be very careful not to use the word sex continually.

The aim of biology is hygiene or correct living in its every aspect. Physiology and hygiene do not have to be given as a separate subject but must be emphasized with every example taught in the classroom or laboratory. Beginning with the one-celled plants and animals, the correlation is to the cells of the body. The reproduction of these forms to the reproduction and growth in the human body. The study of higher forms correlates with tissues and organs. In speaking of these organs naturally their care or hygiene is discussed. Going on through the *ascending* scale of life, more and more opportunity is given to study the structure, workings and care of our own bodies, always with a *sound, understandable, foundation* to work upon. A plant or animal must take about the same steps as a man, in order to be successful. In animals such as the fish, or frog or bird all phases can be enlarged upon. In our biology work we spend a good part of our time studying one of these animals, especially in the laboratory, going quite into detail. We study the general structure, the organs, the systems such as the digestive, excretory, reproductive, nervous, and muscular. We discuss the differences between our example and the human body. We compare their functions with our own and throughout the course our thought and aim is the better understanding and care of our bodies because of this comparison. The student begins to think of himself as only one of the various forms of life, not different, but more complex, the ruler and master of them all. We include the effect of our minds over the lower forms of life and over ourselves. We try to show the student how we must train our brain in right habits so as to always be master of ourselves. Toward the end of the course we touch upon eugenics, euthenics and our duty to society. Plants and animals are kept strong by elimination due to the survival of the fittest. We have become more humane and have tried to improve these forms physically or mentally wanting. Reproduction is not the right of the individual but of society and so laws to prevent certain matings have been passed. We try to teach certain principles which will help cause the most efficient matings. The

chief element in selective mating is heredity of physical, mental and moral weaknesses, and *equally* of strong qualities as bodily strength, mental alertness and fine personality. Then there is the infection of the would be parent by venereal and other diseases which may be transmitted to the child, making its life a burden upon society. The foundation of this study is of course Mendels law, which can only be touched upon, with plants and animals again as the foundation. Since reproduction is a social matter the individual must be guided by scientific discoveries and laws which have been passed. We try to show the student that they must be thoughtful in the matter of selecting their mates.

During the ten years in which I have taught biology, I have never yet heard a word of criticism from either student or parent. If the proper foundation has been laid and the teacher watches carefully how his remarks are being taken, changing to some other phase if the pupils are not responsive and again coming back to the original topic from a different angle, he will find no difficulty. Both boys and girls are intensely interested and not as reticent as we would suppose and with very few exceptions are mentally and morally clean.

You will notice that the diseased and degrading aspects of sex have been seldom mentioned in these remarks, and this is not necessary or best. The mind of the pupil is alert and can draw its own conclusions. To give further instruction the classes can be divided and the special problems of the girl and boy can be discussed by a lady or man teacher respectively or by a physician or physical trainer. Personal questions upon all biological topics must be encouraged, and the student will come to the teacher after class. Written questions should be given often in the regular subject and their understanding of matters of sex will surprise even the teacher. The following is an answer to a question given a first semester freshman class, written by a 13-year old girl:

"The bee is attracted by the flower and goes into it to get the nectar which is at the base of the flower. As he crowds in the pollen of the stamen, or male part of the flower sticks to his legs. Then when he flies on to the next flower, he carries the pollen with him. If he alights on a flower of another genus nothing happens, but if he alights on a flower of the same genus, the pollen falls on the female part of the plant, the stigma. This is necessary in order to reproduce them. Then inside the ovary an egg is formed, which later produces the seed and plant. Animals and plants all have ovaries. In the case of a plant, the egg which forms inside the ovary is called a seed, in the case of an animal it is called an embryo."

We find that the best time to begin this instruction in the high school is in the freshman year. We have arranged a course in our elementary science classes which makes a beginning and those who do not take biology will have at least some knowledge of sex problems. Freshmen in mixed classes are not self-conscious and are very responsive. For just a few minutes, I will discuss an outline which I have given to our teachers of elementary science showing how we lead up to and treat the problems of sex. I also teach this subject myself so know what the results have been.

I have divided the subject into two great divisions—growth and reproduction. Beginning with growth first, because the pupil already understands much about it, we discuss the need of food by every living thing. We study the kinds of food necessary for a plant or animal to reach maturity and to continue its life. Following this we trace the course of plant food, from the roots, through the stem to the leaves. Here we explain photosynthesis and transpiration. Going further we briefly trace the dissolved food which is carried by the sap, down through the leaves, stem and roots, feeding the cells of the plant as it goes and finally, that which has not been used, storing itself up in some part of the plant. We at once begin to trace the course of animal food in the same way, beginning with mastication in the mouth and introducing the subject of glands and their function by a study of saliva and the salivary glands. We continually emphasize the function and importance of glands as we continue with the digestion in the stomach and the formation and use of gastric juice. We continue to trace the course of the food throughout the intestine with still further work upon the intestinal glands and the hygiene of these organs and glands. Of course hygiene is constantly mentioned at every place we can. Just as we explain the need of feeding the cells and how this is accomplished in the plant, so we trace the course of the dissolved food through the walls of the stomach and intestine into the blood, which carries it to each and every cell of the body. As in plants, that which is left, is stored chiefly as fat. In the

discussion of feeding the cells we spend one day upon internal glands; their location, functions, and what they do for the body. We start with the pancreasc which has both internal and external secretion, explaining how this secretion seems to regulate the sugar. Here we speak of diabetes. We talk about the white blood corpuscles and how they are produced by the spleen. Then we close with the thyroid, pituitary body, testicles and ovaries and how they affect the growth and the mental state of the person and how they seem to vitalize the body, causing a person to have a perfect stature, excellent mentality and a fine personality. Again we emphasize the care of these organs and the general effects of abuse. You will notice that we constantly compare the plant with the animal so that in reproduction there is nothing different in our manner of presentation.

Continuing with our outline, we discuss respiration and excretion of both the plant and animal, with a study of the organs involved and their proper functioning.

Thus with the foregoing as a foundation and with no undue emphasis put upon the subject we have led up to and are ready to begin the study of reproduction. We take the parts of such a simple flower as the primrose, following this with a more thorough study of the pea or bean. We study the formation of ova, or mother material, in the ovary, and the formation of pollen or father material in the father. We discuss methods of pollination and fertilization. By drawings or slides we show how the material from the male part of the plant enters the ovary where it unites with ova or female part, to produce a fertilized egg. This egg begins to divide or grow within the ovary, and as it grows, the young embryo is formed.

Food is stored around the embryo for its future growth and we then call it a seed. Following this we discuss seed germination, and the growth and care of the young plant. This simple plant reproduction has led up to reproduction in animal life. Beginning with simple cell division in protozoa or infusoria, found in stagnant water, we compare this reproduction with the yeast plant. Next we ascend the reproductive scale to the sponge, coral or sea anemone, explaining their advancement.

Our fundamental work is done with either the fish, or the frog. We use slides, which I have prepared, and if possible a real frog. We study the location of the organs, the ovaries and egg tubes, and the spermaries and sperm tubes. We explain how eggs or female cells are produced and pass down the egg tubes to the outside, and we explain how sperm or male cells are secreted to later be discharged by the male over the unfertilized eggs in the water. We try to have in the laboratory fertilized fish or frog eggs so that the pupils may actually watch the growth of the embryo, first within the egg and later outside, as it continues to grow. We stress that in early forms of life great numbers of young are produced, but few succeed in reaching maturity. On completing this type, we briefly mention the production of ova in the body of the bird and that it is fertilized within the body. This fertilized egg is laid in the nest and protected and kept warm by the mother while the embryo or young bird grows within the egg. With this more effective reproduction more young reach maturity and so this is another step forward. In a few words we speak of reproduction in the rat, guinea pig, rabbit or other familiar mammals, as still another step in advancement because in these, the little embryo is guarded, kept warm and nourished right within the body of the mother. When it is strong enough to help care for itself it leaves the mothers' body or is born. Summing up —in every respect man is similar to all forms of plant and animal life but superior to them. The young, few in numbers are carefully taken care of for a long time. This transition from lower animal reproduction to that of man is the most important point and the teacher must use his personality and common sense as to what to give at the time, and just how much. The time for this must be ripe; use only carefully chosen terms and discuss topics generally, only after the proper foundation has been given. Watch your class carefully and be on the alert to shift the topic quickly. The pupil will be able to think this subject out for himself. Do not hesitate and do not be sensitive nor afraid. The class will feel your hesitancy and the value of the lesson will have been lost.

At this point we sum up hygiene in one or two lessons on bacteria, fungi and protozoa, and their relation to the body. We mention a few examples, such as colds, pneumonia, tuberculosis, typhoid, blood poisoning, boils, gonorrhea, scarlet fever, appendicitis, malaria, yellow fever, smallpox, syphilis, dysenteria and pyorrhea. We briefly discuss the reason for each with the best treatment. In most classes a child will pick out some one he may

have had to ask questions about, and then a general discussion follows. We use a few microscopic slides and lantern slides whenever possible. We discuss the effect of diseased or abused organs upon our nervous system and upon our physical and mental development. A healthy mind and a busy mind is necessary to have a sound body and vice versa. With few exceptions we are born with a healthy body and if our body becomes weak and diseased, it is due to our own neglect. We are not keeping *physically* and *mentally* fit.

Before completing our course we spend a day or two upon the subject of eugenics. The pupil knows that certain qualities, both good and bad are inherited or handed down from his parents. Here as before we begin with the young plant or animal. We study something about the production of pure bred grains, fruits, flowers, vegetables, etc., and about pure bred cows, horses, swine, dogs, chickens, etc. We try to show how it is necessary to use care in the selection of either a plant or animal parent to produce the *kind* of young which we wish. We speak of some good traits handed down by parents to their children, such as the color of the eyes and hair, bodily strength and stature, cheerfulness, unselfishness, honesty, thoughtfulness and strong mentality. We also speak, but not unduly, of some of the bad characteristics inherited, as bodily weaknesses, moroseness, selfishness, dishonesty, thoughtlessness, shiftlessness, weakmindedness, insanity, and blindness and imbecility at birth. Society has accepted the discoveries of science in heredity, and has founded asylums and public institutions to keep men and women, physically and mentally unfit, from endangering society and producing offspring who will be like their parents. Laws have also been passed to keep those unfit from marrying. The young people should be and are being encouraged to select mates who have the fine qualities which we wish and discouraging them from selecting mates who have characteristics which are harmful to themselves, their children and to society.

If we give the young boy and girl knowledge and cause him to think rightly and not act on the spur of the moment; to have ideals and to respect the rights of others, we will have accomplished much. To the pupil a lack of knowledge may mean disease, disaster and misery. It is our opportunity as biology teachers to impart this knowledge.

REPORT OF EDUCATIONAL WORK OF THE WISCONSIN STATE BOARD OF HEALTH AT HEALTH CONGRESS, MILWAUKEE NORMAL SCHOOL, APRIL, 1919.

BY MARTHA RILEY,
DIRECTOR, SOCIAL WORK.

Because of the lateness of the hour and the fact there are three speakers to follow, I will waste no time in preliminaries.

Undoubtedly, you are aware that the United States Public Health Service and the Wisconsin State Board of Health are cooperating in the campaign to combat the social diseases. Our educational department is equipped with exhibits, posters, films, slides and pamphlets to give real information concerning these dangerous communicable diseases. Wisconsin's plan, like that of the government, is fourfold:

1. Legislation and law enforcement.
2. Medical inspection and follow-up work which includes the establishment of state clinics and the treatment of indigent cases.
3. Educational work.
4. A wholesome recreational campaign for local communities.

Because Wisconsin had no great military necessity, we are probably far behind our neighboring states, Michigan, Illinois, Minnesota and Indiana, in hospitalization and law enforcement. However, we have had the advantage of starting our campaign with the educational program first, which, after all, is the ideal and in the end the most permanent way.

I should like to tell you of the ten clinics established throughout the state, of the follow-up work of our health and social workers, but I take it for granted that this group is most interested in knowning what the State Board of Health has done in an educational way.

Beginning July 1st, 1919, in the following eight months we visited forty-seven normal schools, county training schools and teachers' institutes, presenting the film, "How Life Begins," to the groups of teachers. We make it plain to all these young teachers that the State Board of Health does not expect this educational work to be carried on by them at this time. As I meet these teachers over the state I find that they are too young, not merely in years, but in life's experience; they have not the scientific facts nor the

methods of presentation; they lack the vocabulary to give this instruction, and further because a man or woman is a teacher, it does not always follow that they have the right attitude towards life. Here and there, I do find excellent men and women in the high and vocational schools taking individual boys and girls and giving them this so necessary sex instruction; at least enough to put them on their guard. Almost always, however, something most unhappy has come into the lives of the boys and girls before the teachers have dared to give such information.

The department has six films, four of which are used constantly by my assistant and myself. The film, "How Life Begins," we present to high, junior high, vocational and county training schools, to parent-teachers' associations, mothers' clubs and kindred organizatoins. In high schools not equipped for the presentation of films, we hold meetings for "girls and mothers of girls," and ask that the school nurses and teachers be present. After giving the talk to the girls, we hold a mothers' conference, which usually helps to open the way for them to speak to their children.

We present Catherine B. Davis' dramatic story, "The End of the Road," to the adult public, usually in the evening at the local moving picture houses. In some cities large concerns employing groups of young women and girls have graciously released their workers at 4 P. M., enabling them with their industrial nurses to attend the presentation on company time. To these various groups we have given 391 lectures and 232 film showings. At many of the lectures a film was shown, and at every film showing a lecture was given, but these are tabulated as only one meeting.

With the aid of the high school principals, or teachers recommended by them, we have carried on a "Keeping Fit" campaign by means of charts and pamphlets. We have also had the part time services of a teacher who has visited several counties and delivered his message directly to the boys. By these two means we have reached since November 1st, 1919, over two hundred schools and over 19,000 boys.

There are many demand from vocational, high and county training schools which we can not meet, not merely because of lack of time and workers, but because the more intensive work with students and teachers is, in my judgment, not within the province of the State Board of Health.

Our eight social workers in our state clinics have done intensive educational work not only in the cities in which they are located, but also in the cities in the surrounding counties. In addition to their duties in the clinics they have worked for more protective workers among women and girls and cooperated with juvenile courts and other municipal bodies in suppressing undue publicity in cases involving sex offenders. Our big problem, of course, as with every other social agency, is the girl below par mentally, the girl who is not able to protect herself.

We have received excellent cooperation from the State Department of Public Instruction, from the Wisconsin Free Library Commission and the Industrial Commission.

The Wisconsin Travelling Library is circulating approved sets of books on sex instruction. These can be retained three weeks without charge to groups or individuals who desire them for study purposes.

We have sent open letters to all public librarians, asking that they set aside a shelf of books for mothers and teachers.

We have outlined lessons for parent-teachers' associations and mothers' clubs, with lists of suitable books and pamphlets for study.

One point I wish to make to emphasize the statement made by Mr. Van Buskirk regarding the ages at which children should receive sex instruction. Since last July we have had 465 boys and girls, between the ages of 15 and 20, under treatment; 387 for gonorrhea, 64 for syphilis and 14 for chancroid. This helps to prove the dire need for sex instruction before the child has reached the age of 14 years.

I wish in every high school instead of physics there could be substituted an elementary course in biology in either the first or second years, that in the university and normal schools there could be offered courses for superintendents, supervising teachers, principals and vocational school directors, who desire to carry on this work. I would suggest that even these men and women should be most carefully selected. Constantly I am asked, "Where can we receive this instruction? Where are courses offered by which we may be assisted in meeting this great demand in vocational and high school work?"

In conclusion I will briefly give you a summary of the educational work accomplished to April 1st of this year, not that I wish to show all that

we have done, but I want you to know the amazing response there has been from public officials, educators, social workers and fraternal organizations.

Total number of pamphlets distributed	192,125
Total number of lectures given	321
Number of people reached by lectures	47,199
Number of days card exhibit shown	1,558
Number of people reached by exhibits	469,390
Number of film showings made	232
Number of people reached by film showings	58,865
Number of slide showings made	19

We have every reason to be encouraged with the come-back from our social hygiene program, and although we are anxious to continue we feel that if the ground is broken and public opinion formed, the higher schools must assume their responsibility in the continuance of the work.

NEW TREATMENT FOR LEPROSY APPARENTLY SUCCESSFUL.

The United States Public Health Service has reports of what appears to be a cure for leprosy, it was announced by Surgeon General Hugh S. Cumming.

For some years the belief has been gaining ground that leprosy could be cured, and encouraging progress was made by several investigators. The starting point for this study was the observation that now and then the course of the disease appeared to be favorably influenced by treatment with chaulmoogra oil. The treatment, however, was attended with many difficulties and could not be carried out in all cases. At this point the Public Health Service enlisted the cooperation of Prof. L. E. Dean, head of the chemical department of the College of Hawaii, and president of that institution, suggesting that attempts be made either to isolate the active constituent of this drug, or to devise means for making its continued administration feasible. The latter has been accomplished by preparing what is known as an "ethyl ester" from the chaulmoogra oil. The treatment has been carried on at the Leprosy Investigation Station at Kalihi, Hawaii, the work being directed by Dr. J. T. McDonald, director of the station. The results of the treatment thus far have been so satisfactory that lepers come willingly for treatment, a recent inspection by Hawaiian health authorities failing to disclose a single secreted case of leprosy. Following a course of treatment, extending over about a year, 48 lepers, treated according to the new method, were paroled in October, 1919. Up to now they have remained free from the disease. At the present time the treatment has been administerd only at the receiving station, but it is hoped to provide facilities for the treating also of lepers in the leper colony at Molokai.

Surgeon General Cumming's announcement relates to lepers who have been treated by the new method and have been under observation for a considerable period. Moreover, the decision as to apparent cure has, in the case of each patient, been officially determined, not by officers of the public Health Service, but by a special parole board, which alone has authority to discharge a patient from custody.

The Public Health Service is now conducting a very careful study of the treatment, making detailed records of all the cases and taking photographs of the lesions once a month. Details concerning the treatment will be published in the near future.

PSYCHIATRIC SOCIAL WORKERS WANTED.

The United States Public Health Service has appealed to the American Red Cross to begin a national campaign for volunteers to be trained as psychiatric social workers among the 50,000 World War veterans suffering from nervous and mental diseases in Public Health Service hospitals. Nearly two hundred workers will be needed before fall to care for such cases. There are today only 150 such workers in the country, and it is obviously inexpedient to take them from their present tasks.

In accordance with this request, the Red Cross seeks volunteers for these positions at salaries ranging from $1,500 to $2,100 a year, offering summer school courses, on a scholarship if necessary, to provide trained workers by fall. The Red Cross is so hard pressed in its own departments that it will be necessary to recruit students from other groups of social workers. That the employment will not be temporary is shown by figures compiled by the Bureau of War Risk Insurance, which estimates that the peak of these cases will not be reached until 1929.

There are at present seven large hospitals operating under the Section of Neuro-Psychiatry in the Public Health Service. One has no trained psychiatric worker, while none has more than one. The number of beds each worker can handle efficiently is estimated at forty, so that, with a capacity of about 1,300 beds in the seven hospitals, 34 workers are needed in them alone. About 100 others are needed in the District Supervisors' office of the Public Health Service Department and in other administrative tasks. Seventy more are needed to handle increasing numbers of cases expected in the fall.

Smith College, the New York School for Social Work, and the Chicago School of Civics and Philanthropy offer summer courses in this work and will receive Red Cross students. To take the courses, recruits must have a college education and at least one year of case work experience. A large number of applications have already been received—many of them from women with overseas experience.

SPONDYLITIS AND ABDOMINAL PAIN.

Of eighty-seven cases of hypertrophic spondylitis seen by Douglas Vanderhoof, Richmond, Va. (*Journal A. M. A.*, June 19, 1920), forty patients complained of abdominal pain. In seventeen of these forty cases, the presence of visceral disease could be demonstrated, and the role played by the spondylitis was either ques-

tionable or negligible. In twenty-three patients, however, careful and complete studies seemed to exclude visceral disease as the cause of the patients' complaints. These twenty-three cases of spondylitis form the basis of this article. Briefly, the clinical histories of some of these cases were: 1. Severe pain in left back and flank, with acute exacerbations imitating renal colic; urine negative; two roentgen-ray examinations revealed no calculi in urinary tract; roentgen-ray examination of spine also negative, but clear clinical evidence of spondylitis; complete relief followed orthopedic treatment. 2. Vague, distressing abdominal pains, characterized by drawing, pulling and burning sensations; no acute pain, but the patient had a "catch" in the left hip radiating to the lower abdomen; visceral disease apparently excluded; spondylitis not suspected, but found on roentgen-ray examination of gastro-intestinal tract. 3. Recurring attacks of pain in lower left abdomen for over seven years; appendectomy and freeing of kink in sigmoid appeared to afford relief for one year; recurrence of symptoms; second study of patient disclosed arthritis of lumbar spine; pain controlled by fixation. 4. Attacks of acute agonizing pain on left side resembling renal colic; frequently attacks of pain beneath the right costal border imitating biliary colic; considerable pain in precordial region; no pain in back; visceral disease apparently excluded; extensive hypertrophic spondylitis present. 5. Vague discomfort in lower abdomen described as pulling, dragging or taut sensations; periods of dull pain in epigastrium together with soreness in left chest and left hypochondrium; these symptoms occurred when the patient was up and about and disappeared when he rested in bed; no acute abdominal pain; no complaint of backache; visceral disease apparently excluded; spondylitis discovered accidentally during roentgen-ray study of gastro-intestinal tract. 6. Severe pains in right side of abdomen extending from flank to groin and radiating to the leg; recently similar pains had developed on left side; patient had had two abdominal operations to secure relief, with removal of gallbladder and appendix; persistence of symptoms following operation; well-marked evidence of spondylitis confirmed by roentgen-ray examination; visceral disease apparently excluded. In this series of eighty-seven cases of spondylitis, abdominal pain occurred in twenty-three patients in whom visceral disease could apparently be excluded as the cause. Errors in diagnosis lead to needless operations on gallbladder, appendix and urinary tract. Spondylitis with referred abdominal pain is much more frequent than tabetic crises. Relief of the nerve-root pains is secured by proper orthopedic treatment plus removal of responsible foci of infection.

RADIUM TREATMENT OF CHRONIC LEUKORRHEA

In a series of forty-six cases reported by Arthur H. Curtis, Chicago (*Journal A. M. A.*, June 19, 1920), the patients were subjected to a thorough pelvic examination, the reaction of the discharge tested, smears obtained from the cervix and vagina, and a set of cultures made. Gross pathologic lesions were corrected surgically. The usual hygienic measures were instituted. The most usual and most difficult focus to eradicate lies in the endocervix. Unless the discharge is essentially of vulvovaginal origin, radium is advocated in all severe cases of persistent chronic leukorrhea. After thorough dilatation the cervix and fundus may be curretted for diagnostic purposes. Fifty mg. of radium, preferably two 25 mg. tubes in tandem, are introduced high into the cervix, held by a suture passed through the external os, and left for several hours. One or more subsequent radium treatments of shorter duration may be required. It is best to plan on an interval of from ten to twelve weeks between applications. Each radium tube employed in the treatment of this series of cases was screened by a double gold capsule with a total thickness of 2 mm. The capsule in turn was incased in dental rubber. Examination of cervical tissues after successful radium treatment reveals atrophy of the glands, relative increase in fibrous tissue, and disappearance of microscopic evidences of infection. Skene's ducts harbor the next most important focus. At the time of radium application or under procain anesthesia, the blunt end of a needle, held in forceps, is threaded into the duct lumen, and its end is forced through the base of the duct so that the needle head protrudes into the vagina. The duct is split with a knife and the tract fulgurated. Bartholin duct infection may be eradicated by similar treatment. Infected Bartholin glands rarely require excision. The urethra is occasionally treated by dilatation, aided by instillations of weak silver nitrate solution. Twenty-five patients were cured; 7 were improved; 4 were not improved; in 10 cases no report can be made as yet.

"COMEDY RELIEF."
"NUMBER NINE."

Dae ye mind yon peel with its coat so gray,
It was sent to me in a boxie by the droggist owre the way,
And it woreht a' nicht and the haill Sabbath day
And weel on into Monday's mornin'.

For its twinin' and its twistin' brocht me frae my bed,
An' my weary fit-steps a dizzen times it led
Doon the cauld kail-yard to the wee widden shed
Where we a' ought to gang i' the mornin'.

Ay! I mind yon peel, an' gude reason too,
'Twas a colocynth peel wi' a muckle whack o' blue,
An' it rackit a' my puddens richt through an' through an' through,
An' it left me sair for fauchen in the mornin'.

Na, na! nae mair o' yon peels for me,
Ere I swalla sic anither ane I'd far rather dee,
If the bools winna move, weel just e'en lat them be,
Ye can tak' a big eneemy in the mornin'.

—*Easton Weston in Calidonian Med. Jour.*

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Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DODGE COUNTY

A meeting of the Dodge County Medical Society was held in Beaver Dam, June 18. The attendance was good, twenty-one members sitting down to dinner at the Hotel Beaver. The meeting then adjourned to the council chambers where a "Symposium on Obstetrics" was held, the various divisions of which were given in papers read by members of the Physicians' Society of Beaver Dam. The papers were very interesting and instructive and a lively discussion followed the reading of same.

JEFFERSON COUNTY.

The Jefferson County Medical Society met in the Johnson Creek Clubrooms July 2. A very interesting program was given, Dr. F. G. Connell of Oshkosh reading a paper on "So-Called Chronic Appendicitis"; Dr. A. A. Pleyte of the Wisconsin Anti-Tuberculosis Association on "The Jefferson County Tuberculosis Sanatorium and Its Relations to Tuberculosis in the County," and Dr. T. C. H. Ableman of Watertown on "Common Derangements of the Knee Joint."

H. P. BOWEN, M. D., Secretary.

EAU CLAIRE COUNTY.

Members of the State Board of Health conducted one of a series of meetings on health topics before the Eau Claire County Medical Society at the Elks' Club, June 14. Following a dinner served at the club, the following papers were given: "Health by Mail," Dr. Robert Oleson; "Venereal Disease Control in Wisconsin," by Dr. G. W. Henika, and "The Bacteriology of Some Acute Infectious Diseases, Their Prevention, Diagnosis and Treatment," by Dr. W. D. Stovall.

RACINE COUNTY

At a meeting of the Racine County Medical Society held at Brown's Lake near Burlington, members of the State Board of Health led discussions on important phases of the public health movement in Wisconsin. Dr. C. A. Harper spoke on the public health program for the state; Dr. Robert Oleson spoke on health by mail, dealing with the necessity for prompt and full reporting of communicable diseases, and Dr. C. W. Henika described the state's campaign against venereal disease.

ROCK COUNTY

The regular monthly meeting of the Rock County Medical Society was held in the form of a picnic at Lake Koshkonong, July 29. The wives and families of the physicians were the guests of the day. Swimming, boating, baseball and other games were in order for the day.

FOND DU LAC COUNTY

The members of the Fond du Lac County Medical Society with their families held a picnic at Green Lake, July 28. The party left Fond du Lac at 2 o'clock in the afternoon and on arrival at the lake, a steamer carried them to a point nine miles up the lake, where a fish fry and big feed was enjoyed.

WAUKESHA COUNTY

The regular meeting of the Waukesha County Medical Society was held at the Oaks Sanitarium, Pewaukee, July 7. Dr. M. R. Wilkinson of Oconomowoc read a paper on "Tuberculosis," which was followed by a discussion led by Dr. H. A. Peters.

TREMPEALEAU-JACKSON-BUFFALO COUNTY

A meeting of the Trempealeau-Jackson-Buffalo County Medical Society, held July 29, was in the form of an excursion on the Mississippi. The physicians and their families met at the Winona Hotel, Winona, at 11 A. M. and were addressed by Dr. Plummer on "The Function of the Thyroid Gland." Directly after dinner was served, the boat trip was begun. While enroute, an address was given by Dr. J. M. Dodd of Ashland. The meeting is reported as the best ever held by the Society and had an attendance of forty.

C. F. PETERSON, M. D., Secretary.

NEWS ITEMS AND PERSONALS

Dr. E. C. Grosskopf has been appointed assistant house physician at the Southview Hospital, Milwaukee, to succeed Dr. Ray Kenney, who will take charge of mental cases in the Mendota hospital government medical service.

Ripon is to have a hospital, and about 95 per cent of the people of the community are backing the enterprise. Three or four sites have already been offered for the hospital and an organization of Sisters has agreed to manage the institution just as soon as it is founded.

Dr. and Mrs. A. T. Nadeau of Marinette and Dr. and Mrs. W. W. Kelly of Green Bay have left for an extended auto trip through Canada and the New England States. The doctors will attend clinics in Montreal, Boston and Philadelphia.

Dr. Flora A. Read, who has been engaged in the practice of medicine in Fond du Lac for the past twenty-five years, has gone to Chicago, having decided to discontinue the practice of medicine. Dr. Marie Kersten Dubinski of Portage will locate in Fond du Lac and assume the practice of Dr. Read.

The plans of the E. B. Funston Company for the new isolation hospital at Racine have been unanimously approved by the city council. The estimated cost of the building is placed at $129,000.

Doctors T. W. Ashley, A. Van Westrienen and C. R. Caughey of Kenosha gave a picnic at Brown's Lake, Burlington, July 21, in honor of the nurses of the Kenosha Hospital. The wives and families of the physicians were also guests.

Dr. E. T. Ridgway of Elkhorn has formally announced his candidacy for the office of state senator from the district comprising Rock and Walworth Counties. Dr. Ridgway has practiced in Elkhorn for the past eight years and for several years has held the office of mayor there.

Dr. E. S. Aker of Couderoy, Wisconsin, has removed to Bayfield and taken up practice there.

The new Methodist hospital proposed for Madison is now assured following a meeting of the churchmen, July 23. It is stated that the work of the new state hospital would in no way conflict or be duplicated in the Methodist institution but that the latter would be of great advantage to the hospital which the University will erect.

Doctors Arthur C. Kissling and Paul Dierschke were appointed as specialists to the school medical inspection division of the health department of Milwaukee by Commissioner Ruhland.

Doctors J. A. Cox of Wautoma and W. J. Thomson of Portage took a ten day course on the diagnosis and treatment of tuberculosis at the Muirdale Sanatorium, Wauwatosa, during the month of July. The course is under the direction of the Surgeon General of the U. S. Public Health Service.

A hospital is to be erected in Shawano as a memorial to the boys who served in the World War. The legislature has passed a bill providing for a mill tax for the erection of this institution.

Dr. J. J. Curtin of Sturgeon Bay has removed to West DePere to take up practice.

Two more Milwaukee County communities, Cudahy and South Milwaukee, have opened permanent children's clinics, taking their places with West Allis. The clinic is for children up to the age of 6 years and the service is available to people in the surrounding districts as well as in the city. Dr. J. P. Koeher, director of the Milwaukee County Dispensary, has offered the services of the dispensary and its staff to the three clinics.

The first patients to be treated at the Bradley Memorial Hospital, recently completed at the University of Wisconsin, are twenty-five crippled children sent from the Sparta State School for Dependent Children to receive orthopedic treatment at the hospital. The treatment of these children is the beginning of the medical work planned in connection with the new state hospital to be built at Madison in the near future.

Dr. Robert Oleson, acting epidemiologist for the State Board of Health, has received his permanent commission from President Wilson as surgeon of the U. S. Public Health Service, which is retroactive to April 9th. Dr. Oleson is attached to the Wisconsin department on indefinite leave.

A design submitted by a Milwaukee firm of architects was selected by the Milwaukee County Board for the new county hospital to be located on the Schandein site at Twenty-fourth street and Grand avenue, Milwaukee. The structure designed is large enough to accommodate 500 beds with such modifications in the plans as to permit of the addition of wings which will provide room for as many more. The erection of the building will not be started before the spring.

Dr. A. J. Pullen, Fond du Lac, has announced his candidacy for the Repubican nomination for lieutenant governor. Dr. Pullen was the first member of the state legislature to volunteer for service in the World War and was the author of the Wisconsin soldier bonus bill.

Several physicians of Sheboygan have filed articles of incorporation as the Clinic Building Company of Sheboygan. The company is capitalized for $70,000 and will erect a new clinic there.

The Wisconsin state representatives of the American College of Surgeons met in Chicago recently to consider plans for the organization of a state clinical meeting to be held in Wisconsin some time during the current year. Dr. G. E. Seaman and Dr. Phillip Rogers of Milwaukee were elected to take charge of the coming meeting.

An appropriation has been made to the University of Wisconsin enabling Dr. A. S. Loevenhart, director of the department of pharmacology and toxicology, to search for various compounds of arsenic and mercury which might show a predilection for the central nervous system, either in consequence of their physical or chemical properties. The substances soluble in lipoids might reasonably be expected to find their way into the central nervous system. The object of this investigation is to discover drugs more useful than any now known in the treatment of syphilis involving the central nervous system. The following departments in Wisconsin are collaborating with Dr. Loevenhart's department in this work: Bacteriology and pathology, Dr. Paul F. Clark, Dr. W. D. Stovall; physiological chemistry, Dr. H. C. Bradley. The clinical part of the investigation is under the direction of W. F. Lorenz, associate professor of psychiatry at the university, and consulting physician to the State board of control.

Dr. Ronald B. Rogers, graduate of Columbia University, who served as an officer in the medical corps of the United States Navy during the war, and following his discharge took a post-graduate course at Columbia, has returned to Neenah where he will start practicing medicine and surgery.

The following have been appointed members of the staff of the Milwaukee county dispensary by Supt. J. P. Koehler: Dr. Robert W. Blumenthal, medical department; Dr. V. A. Smith, dentist, formerly with the Milwaukee health department; Miss Minnie E. Arndt, dispensary social worker, formerly with the Milwaukee health department; Dr. H. E. Dallwig, X-ray operator; Dr. J. E. Mulsow, eye, ear, nose and throat; Dr. G. L. Bellin of Muirdale sanitarium, tuberculosis department; Dr. A. F. Young, Milwaukee County hospital for mental diseases, department of nervous and mental diseases.

A $9,000,000 school of medicine, surgery and dentistry, including a 250 bed teaching hospital, has been given the University of Rochester, New York, by the Rocke-

feller general education board and George Eastman of Rochester. The board contributed $5,000,000 and Mr. Eastman $4,000,000.

Arrangements have been completed to reorganize the ambulance company and field hospital equipped by Milwaukeeans at the beginning of the war, thereby returning to Milwaukee the equipment donated when the original companies were organized. The adjutant general has asked Col. Gilbert E. Seaman, former chief surgeon of the Thirty-second division, and later of the Fifth army corps, to direct the reorganization. Capt. Harry Sergeant, who recently received a delayed citation, will recruit the ambulance company, and Maj. John Armitage will be in command of the field hospital.

There is at present a credit of $40,000 with the war department, which will be turned over to these units for purchasing motor equipment. The equipment of the original companies was donated by Milwaukeeans, but when it was found impossible to take it overseas it was turned into the war department and a credit obtained.

Dr. Harry Saltzstein has moved from Milwaukee to Detroit, where he is to be associated with Dr. Max Ballin in the practice of surgery. Dr. Saltzstein is a graduate of Johns Hopkins University, class of 1914, and was house surgeon at Mount Sinai Hospital, New York City for three years before locating in Milwaukee. He was on duty over seas with United States Base Hospital No. 3 on the surgical staff.

The results of the state's endeavors to check the ravages of social disease are revealed in the report of the fiscal year's work of the bureau of social hygiene, rendered to the state board of health. During the year ending July 1, 2,532 cases had been reported by physicians, as required by law. The physicians reported back 2,375 cases as cured. "This figure is worthy of notice," says the report. "It shows that a large proportion of the physicians reporting are carrying out the full intent and purpose of our law. It shows that this large number of venereal disease patients have been held until the physicians have satified themselves that the individuals were cured. It shows that there are over 20,000 people in our state who have been made to realize the seriousness of a venereal disease and the necessity of remaining under treatment until cured." Fourteen clinics have been established where indigent cases may receive treatment free. In seven the state maintains social workers who do followup work. Another worker is empoyed in Milwaukee in cooperation with the four clinics established by the city. The state's clinics and workers are at Superior, Madison, Oshkosh, Janesville, La Crosse, Green Bay and Kenosha. In the fourteen clinics 4,083 treatments were given.

Dr. Gilbert E. Seaman of Milwaukee, was elected president of the Board of Regents of the University of Wisconsin for the ensuing year, at the meeting of the board recently held in Madison.

DEATHS.

Dr. F. W. Rogers of Hartford died at his home in Hartford, June 15, 1920, after a stroke of paralysis. Dr. Rogers was born in Sheboygan County in 1863. He attended the University of Wisconsin, taking a premedical course after which he attended the College of Physicians and Surgeons, Chicago, graduating in 1889.

MARRIAGES

Dr. E. H. Sutter, Milwaukee, to Miss Myrtle M. Bouchard, Green Bay, June 16.

Dr. G. H. Wahle, Fond du Lac, to Miss Elizabeth M. Montgomery, Eau Claire, July 5.

Dr. Clarence Sonnenburg, Sheboygan, to Miss Irene Mehlberg, Sheboygan, June 30.

FALSE ANKYLOSIS OF THE JAW.

G. F. Mouthrop, D. D. S., Buffalo, N. Y.

Some time ago I extracted a deciduous molar for a boy about 12 years of age. About a week later the boy's mother asked me if I would call and do something to relieve the boy as he was suffering intense pain. I found the boy in bed very ill, high temperature, flushed face and badly swollen jaw and neck with purplish congested and shiny skin and jaw set so that he could not open or close his mouth. On inquiry found that parents had called first a throat specialist as first symptoms were sore throat and swollen lymphatic glands, then later on advice of throat specialist they had called a specialist on Tetanus and their treatment was the application of flaxseed poultices and administering cathartics, but the boy seemed to grow worse instead of better. I immediately ordered the removal of the flaxseed poultice and the application of a good hot poultice of Antiphlogistine and a dose of castor oil and asked the mother to report the next morning as to the lad's condition. The next morning the boy's mother phoned me with gladness in her voice that the boy was better—that he had fallen asleep and had the first night's sleep in a week and could open his mouth quite freely and had taken a little food. The boy's recovery was very rapid and he was soon playing with the boys on the street.

In my practice I invariably prescribe Antiphlogistine in cases of abscess and although some patients express the fear that it will draw the abscess to a head and cause it to break through the cheek, in 17 years practice I have never had such a thing hapen.

PENETRATION OF INTESTINE BY ENDAMEBA HISTOLYTICA.

Necropsy studies lead Kenneth M. Lynch, Charleston, S. C. (*Journal A. M. A.*, June 19, 1920), to believe that the endameba first invades the glands and then migrates through the basement of the gland, into and through the intervening tissues and muscularis and on into the submucosa. The characteristic wandering of the cells downward and laterally and not into the mucosa is apparently responsible for the extension of the ulceration beneath the mucosa with the production of the undermining so peculiar to this infection.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Wounds of the Lung and Pleura. By Morelli. Translated by Drs. Lincoln Davis and Frederick Irving. Boston: W. M. Leonnard, Publisher. 1920.

Human Parasitology, with Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damaso Rivas, M. D., Ph. D., University of Pennsylvania. Octavo volume, 715 pages. 422 illustrations. 18 plates. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00 net.

Advanced Lessons in Practical Physiology. For Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University. Octavo of 238 pages. 123 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $4.00 net.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl, M. D. and A. J. Blaivis, M. D. Second edition. 75 illustrations. 4 colored plates. St. Louis: The C. V. Mosby Co. 1920.

Sane Sex Life and Sane Sex Living. By H. W. Long, M. D. 151 pages. Boston: Richard G. Badger, The Gorham Press.

A General Introduction to Psycho-Analysis. By Prof. Sigmund Freud, LL. D. Authorized translation by G. Stanley Hall. President of Clark University. New York: Boni and Liveright. 1920.

The Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M. D. Second edition, revised. 290 pages. 123 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Simplified Infant Feeding. By Roger H. Dennett, B. Sc., M. D. Second edition. 381 pages. 14 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Epidemic Encephalitis. By Frederick Tillemey, M. D., Ph. D., and Hubert S. Howe, A. M., M. D. New York: Paul B. Hoeber. Illustrated. Cloth, $3.50 net.

General and Dental Pathology with Special Reference to Etiology and Pathologic Anatomy. A treatise for Students and Practitioners by Julio Endelman, M. S., D. D. S., Professor of Special Dental Pathology, University of Southern California, and A. F. Wagner, A. M., M. D., Professor of General Pathology, University of Southern California. 440 illustrations, four colored plates. St. Louis: C. V. Mosby Co.

Pathogenic Micro-organisms. By William Hallock Park, M. D., and Anna Wessels Williams, M. D. 786 pages with 214 engravings and 89 full page plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

A Diabetic Manual. By Elliott P. Joslin, M. D. Second edition. 190 pages. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Cloth, $1.75.

Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M. D., B. Sc. Eighth edition. 562 pages with 195 engravings and 9 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

Nurses' Handbook of Obstetrics. By Joseph Brown Cook, M. D. Ninth edition. 468 pages with 189 illustrations and 4 plates. Philadelphia and London: J. P. Lippincott Co. 1920. Cloth, $3.00.

Arteriosclerosis and Hypertension. By Louis M. Warfield, A. B., M. D. Third edition. 265 pages. Illustrated. St. Louis: C. V. Mosby Company. 1920. Cloth, $4.00.

Manual of Psychiatry. By Aaron J. Rosanoff, M. D. Fifth edition. 684 pages. New York and London: John Wiley and Sons, Inc. 1920.

The Problem of the Nervous Child. By Elida Evans. 300 pages. New York: Dodd, Mead & Co. 1920.

Sanity in Sex. By William J. Fielding. 333 pages. New York: Dodd, Mead & Co. 1920.

The Psychology of Dreams. By William J. Walsh, M. D. New York: Dodd, Mead & Co. 1920.

Textbook of Dermatology. By H. Darier. Authorized translation of second French edition. 769 pages. 204 engravings and 4 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $8.50.

The Surgical Clinics of Chicago. Vol. IV, No. 2. 222 pages. 79 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Published bi-monthly. Price per year, Paper, $12.00; Cloth, $16.00.

Shell-Shock and Other Neuropsychiatric Problems. By E. E. Southard, Sc. D., M. D., Boston. Monograph No. 3 of the Psychopathic Department of the Boston State Hospital. Boston: W. M. Leonnard. 1919. Cloth, $10.00.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M. D., F. A. C. S. 223 illustrations and 4 colored plates. 3d edition. St. Louis: C. V. Moshy Co. 1920. Cloth, $5.00.

Personal Beauty and Racial Betterment. By Knight Dunlap. 95 pages. St. Louis: C. V. Moshy Co. Cloth, $1.00.

Sex Attraction. By Victor C. Vaughan, Sc. D., M. D., LL. D. 44 pages. St. Louis: C. V. Mosby Co. Paper, $0.50.

Education in War and Peace. By Stewart Paton, M. D. 106 pages. New York: Paul B. Hoeher. 1920. Cloth, $1.50.

Thoughts of a Psychiatrist on the War and After. By Wm A. White, M. D. 137 pages. New York: Paul B. Hoeher. Cloth, $1.75.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M. D. Second edition. 844 pages. 433 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00.

A Textbook on Physiology. By Russell Burton-Opitz, M. D., Ph. D. 1185 pages. 538 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $7.00.

Pasteur—The History of a Mind. By Emile Declaux. Translated by E. F. Smith and Florence Hughes. 363 pages, illustrated. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Surgical Shock and the Shockless Operation Through Anoci-Association. By Geo. W. Crile, M. D., and Wm. E. Lower, M. D. Second edition. 272 pages. 75 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $5.00.

Sexual Impotence. By Victor G. Vecki, M. D. Sixth edition. 424 pages. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $3.00.

The Diseases of Infants and Children. By J. P. Crozer Griffith, M. D., Ph. D., Professor of Pediatrics, University of Pennsylvania. Two volumes with 436 illustrations, including twenty plates in colors. Philadelphia and London: W. B. Saunders Co. 1920.

Orthopaedic and Reconstruction Surgery—Industrial and Civilian. By Fred H. Albee, A. M., M. D., Sc. D., F. A. C. S., Lieut. Col. M. C., U. S. A., Professor and Director of Department of Orthopaedic Surgery at New York Postgraduate Medical School and University of Vermont. 804 illustrations. Philadelphia and London: W. B. Saunders Co. Price, $11.00.

Nervous and Mental Diseases. By Archibald Church, M. D., and Frederick Peterson, M. D. Ninth edition. 949 pages. 350 illustrations. Philadelphia and London: W. B. Saunders Co. 1920.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A. M., M. D., F. A. C. S. Tenth edition, revised and enlarged. 1200 pages. Philadelphia and London: W. B. Saunders Co. 1920.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M. D. Fourth edition. 602 pages. Illustrated. Philadelphia and London: W. B. Saunders Co. 1919.

Pathogenic Bacteria and Protozoa. By Jos. McFarland, M. D. Ninth edition. 858 pages. 330 illustrations. Philadelphia and London: W. B. Saunders Co. 1919. Cloth, $4.75.

BOOK REVIEWS

Human Parasitology, with notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damasio Rivas, M. D., Ph. D., Assistant Professor of Parasitology and Assistant Director of the course in Tropical Medicine, University of Pennsylvania. Octavo volume of 715 pages with 422 illustrations and 18 plates, most of which are in colors. W. B. Saunders Company, Philadelphia and Dondon, 1920. Cloth, $8.00 net.

A half-century ago, there was no science of parasitology. Parasites were zoologic curiosities and of but little interest to the medical world. The extension of civilization to the farthermost corners of the world has changed all this and we have been taught that many well known diseases are caused by micro-parasites and that others might be; also, that a subject essentially biological is now medical, the author of this work stating that at least one-third of the human diseases are caused by parasites.

This work is suitable alike for students and physicians. It is divided into four parts, the first being an introduction and a history of parasitology; the second on protozoa; the third on metazoa, and the fourth on vegetable parasites.

It is splendidly written, well illustrated and takes its place as the leading text on a much neglected subject. It should be considered a necessity in the library of every man practicing general medicine.

Advanced Lessons in Practical Physiology. For Students and Practitioners of Medicine. By Russell Burton-Optiz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo of 238 pages with 123 illustrations. W. B. Saunders Company, Philadelphia and London, 1920. Cloth, $4.00 net.

This work is for the medical student as an essential laboratory guide for the physiological laboratory. It provides for teaching physiology from practical work and actual demonstrations.

The author recommends that in its use each class of students be divided into sections of not more than forty each and with four assistants to each section. This work is a splendid outline of laboratory work in physiology which can only be followed in a modern, well-equipped medical school. It is well illustrated, and conveniently placed throughout are blank pages for written notes.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl, M. D., and A. J. Blaivis, M. D. Second edition. 75 illustrations, 4 colored plates. C. V. Mosby Co., St. Louis. 1920.

In this work is collected the major part of the information so widely scattered throughout the journal literature of the past few years and boiled down into a convenient reference volume. The second edition brings it up to date and adds a number of new methods in technique and interpretation.

In the main, but one method has been given for each test, this in an endeavor to keep the work practical and avoid giving space to tests that have proved without value or are too complicated. The technique is given just as carried out in the laboratory of the authors. It is a work which will especially appeal to the practitioner who has been out in the field and has not kept pace with the newer developments of laboratory technique, and a work of this character is a necessity to him.

It is practical, easily understood, and beautifully printed and illustrated.

Sane Sex Life and Sane Sex Living. By H. W. Long, M. D. 151 pages. Richard G. Badger, The Gorham Press, Boston.

This little work is a valuable addition to Badger's "Rational Sex Series," two of which have been written by Dr. W. F. Roby, one by Walter Heaton, and one by W. I. Thomas. There is no better series of sex works printed than these, and Dr. Long's measures up to the rest. It is a sane, sensible presentation of the subject and Dr. Long is to be congratulated on having written a classic.

A General Introduction to Psycho-Analysis. By Prof. Sigmund Freud, LL. D. Authorized translation by G. Stanley Hall, President of Clark University. Boni and Liveright, New York. 1920.

Dr. Freud, the originator of a new school of thought, has summed up in this one volume the whole subject of psycho-analysis. In it he sets forth the difficulties and limitations of psycho-analysis and also describes its main methods and results. It can be placed in the

hands of any intelligent lay reader, and neurologists and psychiatrists are surprised at the increasing number of inquiries coming from the public regarding this subject. It is written by the originator of the system and it is, therefore, authoritive. It sums up the results of his thirty years of devoted and painstaking research.

The Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M. D. Second edition, revised. 290 pages, 123 illustrations. J. B. Lippincott Co., Philadelphia and London. 1920.

This is one of Lippincott's very excellent nursing manuals. In the second edition, necessary changes have been made to bring it up to date and the entire first chapter has been rewritten and practically all modified to some extent. It is practical and yet sufficiently comprehensive to meet the demand for broader education along the line of preventive medicine. Dr. Ramsey's work is supplemented by suggestions on nursing by Margaret Lettice, supervising nurse of the baby welfare association of St. Paul. The work is as highly recommended as other volumes in this series.

Medical Clinics of North America. Volume III, No. 6 (Chicago number, May, 1920.) By Chicago internists. Octavo of 286 pages with 18 illustrations and complete index to Volume 3. W. B. Saunders Co., Philadelphia and London. 1920. Issued serially, one volume every other month. Paper $12.00, cloth $16.00 net. Consisting of six numbers per clinic year.

The Surgical Clinics of Chicago. Volume IV, number III (June, 1920). Octavo of 204 pages, 79 illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Published bi-monthly. Price per year, paper $12.00; cloth $16.00 net.

Epidemic Encephalitis. By Frederick Tillemey, M. D., Ph. D., and Hubert S. Howe, A. M., M. D. Paul B. Hoeber, New York. Illustrated. Cloth, $3.50 net.

The first book in English devoted to epidemic encephalitis is indeed a welcome contribution to medical literature. The volume contains a report of thirty-one cases chosen to illustrate both typical and atypical features. It has been the authors' constant aim to present in various forms, with the idea always in mind of aiding the reader to recognize the condition early and to make a differential diagnosis. The work is recommended.

A Diabetic Manual. By Elliott P. Joslin, M. D. Second edition. 190 pages. Illustrated. Lea and Febiger, Philadelphia and New York. 1919. Cloth. $1.75.

One can hardly ask for a more practical guide to the best treatment of diabetes than this small volume. Its 180 pages of text and tables are filled with all the essential knowledge in this field. It is invaluable to the physician, the dietitian and the intelligent diabetic patient.

There is a wholesome freedom from any theoretical discussion.

It is more than it purports to be, for it has a wider field of usefulness than in the treatment of diabetes alone. The general information about metabolism and food brings home to the general practitioner the tremendous importance of exact methods in the treatment of all metabolic disorders and gives him an impetus to the further study of nutrition and diet therapy in internal disease. The book lays down the fundamental principles of treatment without prescribing a routine, that greatest pitfall in the treatment of diabetes. One realizes the absolute necessity of individualization.

Its only fault is also a virtue. It presents the subject in such a simple, straightforward way that the inexperienced might feel perfectly competent to treat any diabetic. Yet we must realize that though it may be simple to one who has spent fifteen years of study on the subject, the practical details of treatment require first of all, thorough knowledge of the disease, a persuasive personality on the part of the physician, an intelligent patient and a complete hospital organization.

H. P. G.

General and Dental Pathology with Special Reference to Etiology and Pathologic Anatomy. A Treatise for Students and Practitioners by Julio Endelman, M. S., D. D. S., Professor of Special Dental Pathology, College of Dentistry, University of Southern California; corresponding member of the Societe Odontologique de France, honorary member of the Sociedad Odontologica de Chile, S. A., etc., and A. F. Wagner, A. M., M. D., Professor of General Pathology, College of Dentistry, University of Southern California., etc. 440 illustrations, of which 340 in the section on Dental Pathology are original, and four colored plates. C. V. Mosby Co., St. Louis.

As stated by the authors, the subject has been treated from the standpoint of gross and microscopical pathology in realization that the needs of the dental student call for just that character of information. They have wisely laid a good descriptive foundation of the general and remote pathological conditions which in natural sequence lead on to the special pathology of dental and oral affections. This makes the work especially valuable also as a reference book for dental practitioners who are thus saved the necessity of seeking such information in other works as would be necessary if the text were more limited in its scope.

The author's original work is shown particularly in the section on Dental Pathology which is presented in such good form and with such admirable illustrations that this feature of the book cannot fail to appeal to every reader.

The introduction to part two, Dental Pathology, is well worth the careful consideration of every student. This is particularly true because of the distinctions which the authors have kept in mind throughout the work in discussing dental diseases from both the viewpoints of pathologic anatomy and pathologic physiology and the predisposing and exciting causes of disease, the effect of lowered vital resistance as well as other influences which are active in pathological disturbances. Although these principles are generally understood by

intelligent readers, it is nevertheless important to have them presented with clearly defined outlines from which to begin the more extensive descriptions of the character and effect of dental diseases.

The histological illustrations of enamel dentin and cementum with their important variations from the normal are exceedingly well described and illustrated as are also the chapters on the Development of the Teeth, Hypoplasia, Microscopic and Macroscopic, Macroscopic Deformities of the Teeth, Abnormalities in the Number of Teeth, Hutchinson's Teeth and Other Syphilitic Stigmata are also unusually well presented. The subject of Dental Caries is begun with much interesting historical data and carried through more or less elaborate general considerations with a particularly interesting division of pathologic processes in dental caries carried successively through caries of enamel dentin and cementum, the causes, pigmentation, etc. Hypercementosis, Abrasion and Erosion are all covered in an exceptional manner. The chapter on Saliva is very valuable and presents in admirable form its chemical and other considerations which ought to receive much more general attention from readers than is usually accorded. Normal and pathologic considerations of the Gums and Gingivae, Calcareous Deposits and Subgingival Deposits are evidently given much careful thought and illustration with a view to laying a foundation for the succeeding chapters which relate to the Diseases of the Peridental Membrane; Nonseptic Pericementitis, Septic Pericemental Inflammation and Acute Apical Dentoalveolar Abscess, all of which are presented in well selected pathologic divisions. The Normal and Pathologic Considerations of Bone, Bone Involvement in Dentoalveolar Abscesses, Periostitis of the jaw are very carefully covered and in commendable sequence. The subject of Pyorrhea Alveolaris is well illustrated and probably as well presented as could be expected in view of the mass of more or less conflicting literature on this subject. It would seem, however, as though while devoting so much space to this very important affection that more recognition might have been given to research work that has been directed along somewhat broader lines than those the authors have seen fit to select. The Diseases of the Dental Pulp have probably never been more completely described or illustratd in any previous work on this subject. The chapter on Mouth Infections and Systemic Diseases treats of a subject upon which there has been a wide diversity of opinion among eminent authorities. The authors have given it very thorough treatment and undoubtedly have done as well as could be expected in the matter of conclusions with regard to any subject concerning which there is much difference of opinion. Certainly the importance of focal infection is well emphasized and that after all is the important matter. Stomatitis is somewhat limited as to the different forms of stomatitis that are described and also their description, but the vitally important features of these affections are without doubt sufficiently well presented to meet the requirements of the work. Certainly the work is a long step forward in the direction of providing a dependable reference foundation which is capable of wide usefulness not only among students but among practitioners of dentistry and medicine as well.

G. V. I. B.

Psycho-Analysis—Its History, Theory, and Practice. By Andre Tridon: B. W. Huebsch, New York. 1919.

This book has been written for the purpose of elucidating and popularizing psycho-analysis. It endeavors to give the outlines of this system of psychotherapy in terms intended to be comprehensible to the laity as well as to the general practitioner of medicine.

The rise and progress of this new science dates from 1893 and although it has been the subject of much debate and discussion, this has all been confined to the rather limited circles of psychologists, neurologists and psychiatrists. Its postulates are new and strange even to the medical world as a whole. It should perhaps be called an art rather than a science, as it can hardly claim a well-digested system of thought or procedure. Its originators have modified their views from time to time and scarcely agree among themselves. An enormous body of literature has grown up around this system of healing, some of which is of little permanent value.

Psycho-analysis is largely concerned with an attempt to investigate and elarify the mental mechanisms concerned with the sub-conscious or sub-luminal mind. The intensive study of the sub-conscious ego, in all its mystery and illusiveness, is the aim and object of this new system, claiming indeed to be a new science, but not as yet accepted as such. It deals with dreams, conscious and unconscious mental associations, repression of hidden "complexes" aiming "by indirection to find directions out." It began with hypnotic suggestion, but Freud, its originator, finding many patients could not be hypnotized, abandoned hypnotism as a necessary part of his system.

This book gives first an interesting sketch which shows the starting point to have been the treatment by hypnotism of a hysterical girl. Breuer, an old Viennese physician, and Freud, recently returned from study with Charcot, in Paris, hypnotized the patient and developed the presence in her sub-conscious mind of affective disturbances which were the cause of her peculiar symptoms of which she was herself quite unaware, having forgotten them or repressed them in her subconsciousness. The patient had been under the control and instruction of an English governess toward whom she felt a strong antipathy. This governess, repellant in herself, possessed a dog which was even more so. This dog was allowed to drink from dishes used at the family table. This circumstance produced in the patient a distaste for drinking and finally a disgust which produced a hysterical inability to swallow. The father of the patient was a hopeless and helpless invalid and the daughter, devoting herself to her father's care, one evening sleeping in a chair at his bedside, with her arms resting upon the back of the chair and her head upon her arm, developed a "pressure paralysis" and loss of power in the arm. In her dream, she saw her fingers transformed into serpents. She awoke in fright and with a helpless arm. These cir-

cumstances having been related by the patient under hypnosis; when she came to herself she found she was relieved and was able again to drink and to use her arm. She called her recovery the "talking cure" and subsequently, at various times when treated in this manner, gained relief from her hysterical "complex."

Brauer designated this process of relief as mental "catharsis" analogous to the physical phenomenon of that character and similar in its effects to the relief obtained physically by alvine evacuation. Out of the above circumstances grew the continued researches of Freud who later reported many similar cases of relief by hypnotism which had been followed by the clearing up of numerous psychoneurotic cases of hidden mental "complexes." Freud eventually abandoned the hypnotizing process and, placing the patients under favorable conditions, encouraged them to recall and describe all past experiences which could have a bearing on their ailments, even occurrences dating from former years, going back to childhood at times. He found this process gave the patient relief and proved curative in certain cases. He finally reached the point of recommending psycho-analysis as a method of treatment. His theory was that all such cases were associated with sexuality as the prime mover, this instinct being a factor, in his opinion, of all the morbid mental mechanisms. He also believed that, by delving in the unconscious and unearthing circumstances and experiences often forgotten or "repressed" by the patient, dating from earlier years, even from childhood, he removed the effects of these so-called "sexual traumata"; a shock of this kind, oftentimes suppressed and forgotten, being the starting point of the morbid process.

In this insistence upon a universal sexual element, his followers did not all agree, and discussion on this point has been a point of divergence leading to repudiation by many of this new method of psychotherapy.

Adler of Vienna, and Jung of Zurich, associates in the development of psycho-analysis, found the origin of the mental state in varied experience of the former life, not alone in the sexual life, but in the field of self-preservation, nutritive life or various egocentric conditions.

Tridon, after his historical sketch, treats in successive chapters of the "urges" as related to the unconscious repression, the source of the morbid "complexes." Then follow chapters on dreams and their interpretation and on symbolism employed in the elucidation of dreams, on which subject Freud has written a book in which he elaborates a system of "Traum Deutung" or dream interpretation. He traces lines of connection which open up a view of the deeper recesses of thought in the patient's mind and the contents of the dream represent in his opinion the deeper wishes and feelings of the patient, giving an insight which could be obtained in no other way.

After dealing with dreams and their interpretation, whether the dreams occur in the unconsciousness of sleep or the partial dream state of reverie, discussion is extended to the myths of various races; these and folk traditions are recognized as a part of dream-life and subject likewise to analysis. Myths of various races differing in detail, but corresponding in their main features one with another appear again and again dating from prehistoric ages changing environments down to recent times. The Greek, Babylonian, Persian and all other races have their mythological annals, dream tales, fairy stories and folklore creations, stories of gods, demigods, heroes, like those of the Grecian mythology, the "Niebelungen Lied," the stories of King Alfred, King Arthur, or simple fairy tales like "Cinderella," and "Red Ridinghood."

These all represent a conflict between good and evil in innumerable forms; some tragic, others representing the triumph of virtue. They are full of symbolism and admit of various interpretation. In the dream interpretation of Freudianism, a system of symbolism is employed and meanings are given to objects and acts in accordance with Freud's ideas and fancies which often seem arbitrary in the extreme.

Freud also attaches a significance to every day occurrences; like forgetting names, taking the wrong train, humming a tune, etc., and these it is claimed are not the result of accident but of sub-conscious processes of thought. There is further description of Freud's writings on wit and witticisms and these, too, it is claimed are an index to the unconscious mind.

Our space will not admit of further exposition but we can recommend this book to all who being unfamiliar with psycho-analysis desire to gain an elementary conception of theory and practice. R. D.

Sanity in Sex. By William J. Fielding. 333 pages. Dodd, Mead & Co., New York. 1920.

This work is another timely contribution to the impetus given to education in sexual matters by the World War. The book is well written, covers the subject as thoroughly as possible in a publication of 300 pages, and the opinions expressed and the information given conforms with the most enlightened and constructive views on the subject. The work meets the test of practicability and can be safely recommended.

Manual of Psychiatry. By Aaron J. Rosanoff, M. D. Fifth edition. 684 pages. John Wiley & Sons, Inc., New York and London. 1920.

Doctor Rosanoff's work has now reached a fifth edition and, by those interested in the subject, it will be accorded the same cordial welcome which previous editions of his work have received.

New chapters or sections dealing with the application of psychology in psychiatry, psychoneurosis, hyperthyroidism, Stanford's revision of the Binet-Simon scale, standard psychological tests and the classification of mental diseases adopted by the American Medico-Psychological Association have been added. Other sections of the work have been entirely rewritten and the index greatly amplified.

The work is divided into three parts, the first dealing with general psychiatry, the second with special psychiatry and the third consisting of appendices, giving technique of special diagnostic procedures. The new edition is recommended as highly as have been previous editions of the work.

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ENCEPHALITIS LETHARGICA.

So much has recently been written in the newspapers about the appearance of Sleeping Sickness in various parts of Europe, and even of the United States, that the League of Red Cross Societies has deemed it advisable to call attention, through its bulletin, to a few of the striking features of the disease, and to some of the popular misconceptions concerning it.

"In the first place," says the bulletin, "the name 'sleeping sickness' should not be applied to it as this name should be used only in connection with the African Sleeping Sickness—a disease of absolutely different cause although resembling in some of its clinical features certain aspects of the disease now so much talked of in Europe.

"This disease is absolutely different in origin and for that reason the name used to describe it should be 'Encephalitis Lethargica,' the name given to it by Von Economo when he first described it in Vienna in 1917, although it is probable that the disease has been present in sporadic form and not recognized before his description. Subsequent to Von Economo's report, cases were noted in various portions of Austria and Germany, and by Netter in France, while in 1918 a fair number of instances of the disease were described in England and America. After a cessation of a number of months there has recently been again a quite marked outbreak of 'Encephalitis Lethargica' in England, America, France, Scandinavia, Central Europe, Spain, Italy—even in Switzerland; but as before, the cases are comparatively few in number although very widely distributed, and do not at all present the usual picture of a marked epidemic.

While there are a few cases of great mildness and a few others of fulminating severity, the majority of the cases present a fairly clean-cut clinical picture, with, as their striking triad of symptoms, fever, of greater or less extent; paralysis of certain cranial nerves, notably those of the eyes and eyelids, so that ptosis or drooping of the lids is especially common; and a striking tendency to sleep, which is usually progressive, so that it is not unusual to find patients constantly in a coma. They often can be aroused by loud shouting and are frequently relatively clear mentally after being awakened, but they usually relapse into a state of somnolence almost immediately. The disease often ends fatally but recovery is by no means uncommon. Regarded at various times and by various observers as due to food poisoning, or as representing an unusual form of poliomyelitis or other similar disease, the general belief at the present time is that 'Encephalitis Lethargica' is an independent disease of infectious origin.

"The fact that it is frequently present at the same time and in the same localities wherein epidemic influenza abounds, while at first causing many investigators to believe that the diseases are definitely related, is now explained by most authorities on the basis that the diseases both develop under the same conditions but are independent. Whether an abnormal physical or mental condition consequent upon the war may be a factor one cannot say, though there are a few who believe that an increased susceptibility or lowered resistance due to these causes play a distinct role. The studies done upon these cases seem to show that the disease really represents an inflammation of certain portions of the brain and nervous apparatus, although the exact cause of this inflammation has not been determined. Recently a filterable virus has been obtained from the mucous membrane of the nose and throat of certain cases dying of the disease, and this virus seems to be able to reproduce in monkeys and in rabbits symptoms and lesions similar to those found in human beings. These same observers, by special methods of culture, state that they have been able to grow an organism which they believe is the cause of the disease, which requires an especially refined technique and which differs from others heretofore described.

"At the present state of our knowledge therefore, it would seem that 'Encephalitis Lethargica' is met with over a widespread area, but that it is only mildly epidemic, and that it is slightly if at all contagious in the usual acceptance of this word; that individual susceptibility seems to play a distinct role in its incidence and possibly many persons harbor the causative virus or micro-organisms, probably in the nose and throat without showing any symptoms whatsoever; that no casual relationship between it and epidemic influenza has yet been demonstrated; and that its main symptoms are fever, paralysis of certain muscles of the eye; and sleepiness.

"With 'Encephalitis Lethargica' occupying such a prominent position in the press, it is obvious that many treatments should have been suggested but at the present writing there is no recognized, specific treatment which offers any real hope of cure. After all this is what would be expected in the case of a disease, the exact nature of which, as well as its method of propagation and dissemination, is still unknown, although it is probable that the infection is first localized in the nose and throat. On the other hand recent work gives us the hope that before long our knowledge will be increased, and one has a right to look for a possible and rational cure in the comparatively near future."

MEASLES: BRAIN COMPLICATIONS.

Two cases of measles seen by A. L. Skoog, Kansas City, Mo. (*Journal A. M. A.*, June 19, 1920), presented brain complications, one a cerebellar and the other a meningeal involvement. The first patient made a complete recovery in a short period, indicating that few or no cerebellar neuronal elements were destroyed. The second patient was not so fortunate. It is reasonably certain that imbecility and possibly epilepsy will always be present.

CONGENITAL FACIAL PARALYSIS.

Two additional cases of this condition are reported by Frank R. Fry, St. Louis, Mo. (*Journal A. M. A.*, June 19, 1920), who has now seen three such cases. The symptoms in each case were typical and in none was there any evidence of hereditary origin or of birth trauma.

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ORIGINAL ARTICLES

PLASTIC WORK IN SURGERY OF THE JAW.*

BY GEORGE V. I. BROWN, M. D., F. A. C. S.,

MILWAUKEE.

It appears to be a safe premise to state that the horrors of war injury mutilations have been so graphically described and depicted, and such illustrations so widely published that neither our minds nor our sympathies extend to this aspect of the results of the great strife as they did before constant repetition dulled our sensibilities in this direction.

Assuming that it is reasonable to hope that the need for active war surgery may have passed, for the present generation at least, with the signing of the Armistice, the vital issues pertaining to the history of medical and surgical war experiences may be summed up in the single question:

What has the war taught that may be useful to medicine and surgery? First, in giving relief to the great army of returned sufferers from war injuries and diseases who are now, and in many cases will continue to be, in need of such assistance. Second, to improve methods of treatment in civil practice. Reducing these considerations to the limits of plastic surgery with special reference to the region of the face and jaws, two general divisions are presented in classification.

1. The immediate repair of wounded parts as performed in the overseas hospitals.

2. The final restorative treatment as now being conducted in the more permanent hospitals of this country.

Observation of the deformed and deeply scarred faces and jaws of war injured soldiers in large numbers from many different hospitals on the other side as they came under our care at the United States Army General Hospital No. 11 at Cape May, New Jersey, to which for a time all head surgery cases were sent as the men returned to this country, and later as chief of the Maxillo-Faciale Service at the Walter Reed Hospital, Takoma Park, Washington, D. C., has impressed upon my mind quite deeply the very great importance of correct immediate treatment at the time of or soon after injury as a governing influence upon later operative results.

The nature and extent, even the final outcome of all the plastic surgical reconstructive operative treatment of these war disfigured patients must of necessity be controlled by the indications of the conditions resulting from the early treatment they received at the hands of surgeons overseas whose first care often determined the loss or retention, the proper placement or the misplacement of important structures.

That there was any possibility whatever of later improvement in these cases was due in many instances to surgical operations performed in the war zone under unbelievably difficult conditions but which were nevertheless simply marvelous in securing foundational benefits for future plastic surgical reconstruction.

It has been said that after all the war brought practically nothing new to plastic surgery; that many operations published as new were really old. This is no doubt necessarily true to some extent, but whether it be entirely true or not, this much is certain. Plastic surgical methods have been revolutionized because the necessity for the performance of large numbers of operations that were formerly more or less unusual or at least comparatively infrequent, has taught by constant clinical illustration the actual status of the results of such operations.

Surgical judgment based on practical experience has brought definite conclusions with regard to the selection of operative procedures that could not have been otherwise acquired in many years of ordinary practice. In short, when inelegantly expressed "the bunk" has to a large extent been taken out of plastic surgery as formerly taught, and set forth in many previous works on cosmetic surgical operations. Many operations that may

*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 2nd, 1919.

employed in some individual cases have come down to us from antiquity through a long line of text book illustrations, and been copied indefinitely by the misplaced confidence of more recent authors, seconded by the economical promptings of modern publishers, until it is no exaggeration to say that not unusually such operations are more valuable as indications of what not to do than for any intrinsic merit which would warrant their continuance. Unfortunately it has taken many useless mutilations to teach this lesson.

At the School of Plastic Surgery which was organized under my direction by order of the Surgeon General we were accustomed to teach this principle by outlining on the cadaver and on dogs characteristic defects. Each of these was then corrected by a number of different procedures following the well known text book illustrations, and then the operation of choice was performed in order to demonstrate that infinitely better results could almost invariably be secured by more direct and often much simpler methods.

There are certain principles, the observation of which immediately at the time of injury is vitally necessary for the success of subsequent corrective treatment. For example; the loss of a portion of the horizontal body of the mandible presents the alternative of forcing the fragments apart in order to bring the teeth into normal occlusion, in which case only a fibrous union must result, and a bone graft be required later on unless a permanent prosthetic appliance is worn continuously, or the drawing forward of the ramus to permit of its being attached to the end of the remaining jaw without regard for the disarrangement of the occlusion of the teeth.

Both of these methods have been strongly advocated, and both have been quite extensively employed. Basing judgment on the results as shown by many cases treated by both methods in the overseas hospitals that came under our observa- have served a more or less useful purpose when tion after their return, it appears to be safe to conclude that each one of these methods of treatment has its advantages, and both have disadvantages which should be avoided as much as possible.

Even though there may be considerable disarrangement of the occlusion of the opposite sides of the jaw when the remaining portion of the body of the mandible is brought into contact with and sutured to the ramus, the advantage of immediate healing and consequent relief for the patient which this procedure makes possible is one of no little importance. As a matter of fact the ramus comes forward to meet the difficulties of the situation in an almost unbelievable degree, and if allowed to slide by on the outside of the upper jaw so that its anterior border does not meet the tuberosity of the maxilla in closing the mouth thus preventing complete closure, a very considerable readjustment becomes possible and the disadvantage of disarranged tooth occlusion correspondingly improved. On the other hand in cases such as that shown in the moving picture film (see foot note) the key to the whole situation lies in first securing immobilization of the jaw fragments, and much depends on the manner in which the parts are forced to their normal relations, and the lost muscular functional activity restored. Failure to do this in the case of the young man whose case is illustrated resulted in long months of unnecessary discomfort during which the fractured bone ends were drawn inward and turned in such malposition by the loss of the counteracting muscular control that there was constant irritation of his tongue and as this condition became worse through scar contraction there was almost no space left for his tongue except with his jaw hanging and mouth half open with constant drooling of saliva which was in itself a serious annoyance.

The methods of treatment required in these cases may be broadly described under two widely applicable distinctions.

1. Those in which immediate correction may be accomplished by uniting adjacent bone or soft tissue surfaces.

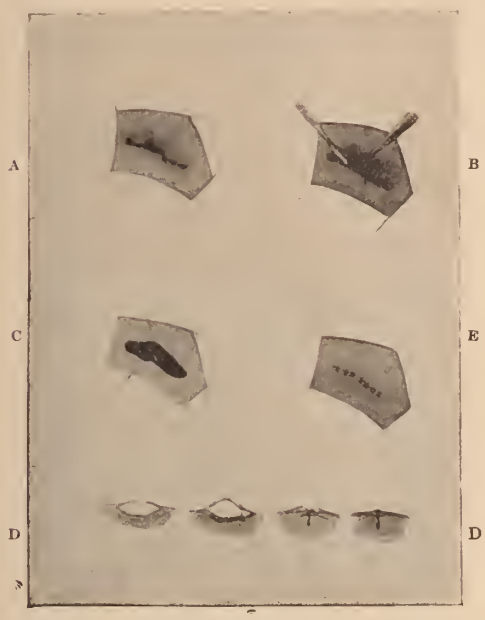
2. Those in which by reason of lost tissue and the unfavorable condition of surrounding parts, it has become necessary to transpose or transplant similar or at least favorable structures, or by artificial means to supply a substitute for the lost parts, either to restore function or to improve cosmetic appearance or both. Under these two heads may be included practically all of the many and often wonderfully ingenious devices that have been applied to the surgical and mechanical re-

*The moving picture film referred to as having been shown when this paper was read, was prepared at the U. S. Army Medical Museum under the direction of the writer.

storation of war injuries and other facial disfigurements.

The first group includes bone injuries which may require simply a proper approximation of the divided surfaces and their fixation by suitable

Fig. 1.



Removal of uncomplicated depressed scar. (a) Scar surface. (b) Excision of scar tissue. (c) Shows outline of undercutting of tissue required in such cases. (d) A profile view showing the adjustment of underlying tissues and their fixation by buried catgut sutures to prevent recurrence of the defect. (e) Skin surface closed.

splints or wiring as may be indicated and wounds that can be closed by direct approximation with the aid of wide undermining if necessary. Under the second group, we find an almost infinite number of operative procedures which again require subdivision for intelligent comprehension of the possibilities of their application. The most important of these may be enumerated as flap sliding or covering the defect by making suitable lateral incisions and sliding adjoining parts into the desired position as is extensively done in the closure of cleft palates and other procedures which require similar methods of treatment. Pedicled flaps from nearby parts twisted and laid over the denuded areas. Pedicled flaps from other parts of the body held in place until union has taken place, and the pedicle divided at a later operation. Double pedicled flaps. Double epithelized flaps.

A study of the literature, particularly text books on the subject of plastic surgical operations, brings forcibly to mind the need of the observance of a principle the real importance of which becomes more and more clearly understood as the operator's experience in plastic surgery becomes extended, namely that an operation is not warranted even though it may effect improvement in the correction of a specific deformity or defect if it be of such character as to create another deformity which although different, may nevertheless be quite as unsightly or otherwise disadvantageous as the original one. Clinical examples and almost unlimited illustrations in the surgical literature pertaining to such operative procedures give striking testimony of the truth of that statement. While it must be admitted that pedicled flaps from distant parts may be successfully placed and sutured to supply lost structures, this should never be done until the possibilities of closure of the wound or relief from the defective appearance by the use of sur-

Fig. 2.

Deeply depressed cheek scar treated as illustrated in Fig. 1 and showing application of the silver button tension sutures laid over adhesive plaster to prevent skin cutting.

rounding or closely adjacent tissues have been fully exhausted or after due consideration found to be impracticable. It goes without saying that when the transfer of tissue in this manner does

become necessary that the selection of the site from which the flap is to be raised must be governed by the similarity of the tissue to that surrounding the defect and the facility with which the parts may be kept in suitable position to per-

Fig. 3.

The operative steps in the treatment of a deforming scar, such as is illustrated in Fig. 4.

mit successful establishment of union and growth until such time as the pedicle may safely be cut and the final suturing in the new situation be accomplished. Flaps from the forehead according to the Indian method have long been successfully used to cover nasal and facial raw surfaees.

The Italian method of suturing a flap raised from the arm and binding the arm to the head for a sufficient period to permit union has also been more or less extensively used since the time it was illustrated in 1592, and perhaps earlier, and yet with the great natural supply of very elastic easily adapted tissue that may be raised from the neck including part of the platysma, with overlying fascia and loose skin, it rarely becomes necessary to resort to expedients which at best must leave a large scar surface upon the forehead even after careful skin grafting has been successfully performed, or a mass of tissue covered with the soft white hairless skin from the arm which to the very last has a more or less unnatural appearance on the face. Really great wounds and otherwise deformed and disfigured surfaces affecting the face and jaws may sometimes successfully be covered with slight risk of failure through insufficient blood supply or for other reasons by any of the well known methods of utilizing neck tissue for this purpose. Figs. 1-2-3 illustrate methods by which depressed scars may be removed and the contour of the facial outline restored by careful excision of the scar itself, dissecting away all scar tissues that may be reached without actually entering the vestibule of the mouth and wide undercutting to free the tissue for a very considerable distance from the border of the wound in every direction. The wound is then closed by suturing with rows of deeply buried catgut sutures, over these again gut sutures are passed through the fascia and muscles under the skin, and final coaptation of the skin borders is made with horschair and 1,500 to 2,000 fine vaselinised linen. Tension is relieved and the parts held in right relation by a silkworm gut button suture secured well back from the skin border and placed at the point of greatest tension with adhesive tissue protection between the skin and the button to prevent irritation, the marking of the skin by the metal under pressure and the suture from cutting and thus scarring the skin. The adhesive plaster held by the button above it gives a very much greater and safer resistance than any kind of suture alone, which no matter how securely the buttons on a skin surface may be placed has nevertheless, only such resistance as may be offered by the suture against the opposing tissue and which when unsupported so often gives the unsightly scars that mar otherwise perfect operations. A type of scar which frequently followed the earlier methods of suturing large war wounds showed a depression at some central point from which scars radiated in different directions as in Figs. 4-5. My personal belief is that any attempt to completely eliminate these scars at one operation would inevitably result in some degree at least in a return of the old defect at the central point where the scars met. To obviate this I am accustomed to remove the depression and restore the outline of the cheek as described and illustrated in Fig. 6. Instead of attempting to extirpate all the radiating scars at once the purpose is to so change their form that at a subsequent operation additional scar tissue may be removed with still further improvement of the facial contour and without danger of the recurrence of the depression.

It should never be forgotten that the form of soft parts must necessarily be governed by the underlying bony frame work. When this has been destroyed it should be restored if possible by bone grafting, but when this is not practicable a properly made appliance of vulcanized rubber may be molded and trimmed to fit the parts and so formed as to supply exactly the desired contour. Over this the soft tissues are laid and adjusted in such manner as to give the desired appearance. This plan has been extensively followed in the European hospitals and in a large measure is responsible for many of the really wonderful plastic results obtained when the soft parts were made to fit over the appliance and sutured with it in place. Many cases were given this treatment in French, British and German hospitals with marked success. In the final surgical reconstruction of these cases such an appliance not only serves to preserve temporarily the outline of the face, but also gives a permanent support when worn after the healing of the reconstructed parts has been accomplished. The same method has been found to be exceedingly satisfactory and apparently is the only completely satisfactory method of restoring the symmetrical appearance of the lips and face when these have been marred by the scars and deformities which so often follow imperfect harelip and cleft palate operations, or the loss or displacement of tissues in this region from other causes. In cases where operative treatment as described and illustrated in Figs. 1-2-3-4-5 for simple depressed scars would be insufficient and adjoining tissue must be called upon to supply the deficiency, this may sometimes be done by raising pedicled flaps and sliding them directly over the area to be covered. When necessary to have epithelium on both sides, this may be accomplished first by turning a flap raw side up and skin side in then over that laying another flap raw side down and skin side up and securing these with sutures in such manner that when the wound heals there will be skin lining under and skin covering over the site of the operative correction. When this is not practicable a Tiersch graft may be rolled about a piece of dental modelling compound or, better still, gutta-percha, either of which can be molded to fit any particular cavity to be covered according to the stent method described by Esser. This mould with the raw side of the Tiersch graft outward and the external skin surface next to the mould is slipped into an incision in the tissue and secured with

Fig. 4.

Depressed scar, which not only deformed the surrounding muscles and destroyed the outline of the face, but also caused almost complete fixation of the lower jaw.

Fig. 5.

The same man after excision of the scar as illustrated in Fig. 3, by which the outline of the face was restored and the patient enabled to open and close his mouth with freedom.

sutures and is applicable when it becomes necessary to line with skin a cavity such as the mouth or orbit. After the skin has formed, incisions along the inside of the cavity to be lined down to the mould, allows its removal and leaves an epithetral tissue lining. A Wolff graft containing all the

Fig. 6.

Shrapnel wound which destroyed the external wall of the right frontal sinus and left a deep disfiguring scar.

Fig. 7.

Same case shown in Fig. 6, after the insertion of a rib cartilage transplant and closure of the overlying tissues.

layers of the skin although it goes through a stage of desquamation and may become dark and thus apt to confuse those who are not accustomed to the use of these grafts by this unfavorable appearance will nevertheless usually clear up and in most cases will leave a good foundation for the site of a second operation if for any reason one should be necessary. To that extent these epidermal dermal grafts may be considered preferable to the Tiersch graft, but in many respects for ordinary cases the Tiersch graft is much more satisfactory. One should be familiar with both in order to decide wisely as to their use. In grafting bone and transplanting cartilage it seems to be quite well established that in cases where a bone graft with periosteum attached may be placed in firm contact with a freshened bone surface its usefulness is reasonably assured if properly inserted and fixation firmly secured, but when the graft is to be inserted at a point where it will be surrounded by soft tissues a cartilaginous transplant is preferable because under these circumstances bone sometimes absorbs very rapidly, whereas cartilage appears to take quite kindly to surroundings of this character. Therefore in the case shown in Figs. 6-7 replacement being required over an area exposed by the destruction of the external wall of the frontal sinus, the sinus having become filled in with granulation scar tissue against which the supporting structure was placed, it was deemed decidedly preferable to use a rib cartilage for a transplant

Fig. 8.

Deformed nose and scarred lip.

Fig. 9.

After excision of the lip scar, adjustment of the outline of the mouth, correction of the nasal alæ, the insertion of a rib cartilage transplant on the right side of the tip of the nose, reproducing its normal outline.

instead of a bone graft at this point. Figs. 8-9 illustrate rib cartilage transplanted to the tip of the nose. The nose shown in Figs. 10-11 was

grafted according to the method followed by Dr. Lee Cohen of Baltimore and inserted through an incision along the inner surface of the naris through the external wall down to the border of the nasal bone. The periosteum and overlying

Fig. 10.

Shows a man with saddle nose.

Fig. 11.

Photograph of the same case after the insertion of a bone and cartilage graft taken from a rib and inserted from the inside of the nose without external scar.

tissues of the nose were raised from the bone completely along the dorsum and both lateral surfaces. The graft was so cut from the rib as to include the cartilaginous junction and therefore contained both bone and cartilage. When the graft was inserted the bone rested upon the nasal bones and the cartilage supplied the necessary outline to the cartilaginous portion of the nose.

Bone grafts for the mandible according to my experience are best made according to the Albee method of tibial graft cut with an Albee saw. The mandibular bone ends should be exposed through an external incision along the border of the jaw without penetration into the mouth. The graft is placed in grooves cut by the same double saw with which the tibial graft was cut, and sutured into place with kangaroo gut. The chief difficulty in these cases is to secure complete immobilization. If the anterior teeth are wired together a fairly good amount of security in the way of immobilization may sometimes be secured, but under a general anaesthetic, vomiting is a serious menace when the jaws are fastened firmly together unless their separation can be quickly effected. Difficulty in keeping the mouth cleansed is also a serious object. A plan that has been found to be quite satisfactory is to insert splints which fit the upper and lower jaws separately and perfectly. These are so arranged that when the jaws are closed there will be firm contact along the occlusal surfaces. By an ingenious arrangement which allows a tube upon the splint of one jaw when the mouth is closed to come exactly in line with and between two short similar tubes attached to the opposing appliance through which a pin may be inserted after the appliances are firmly cemented to the teeth. In this way the best possible fixation of the jaws can be secured while at the same time it is possible to take out the pin that goes through the tubes of the appliance to hold the parts in position, and thus set the jaws free instantly if necessary. The parts may again be brought together accurately with the parallel tubes exactly in line and the pin replaced without fear of the jaws getting out of alignment. Fig. 12 A. B. shows the result of this treatment.

Osteoperiosteal bone grafts, according to the plan recommended by Le Maitre and others, have an established place in bone reconstruction work. These are prepared by cutting the outline of the graft on the periosteum of the tibia with a bone shaving of the outer surface of the bone attached to it but slightly smaller than its periosteal covering. Two of these osteoperiosteal grafts are placed one with the periosteum inside and the bone facing the outer surface, and the other with the periosteum on the outside and the bone surface inward. A third graft similarly cut is sometimes placed between them. The overlapping periosteal borders are sutured to the mandibular periosteum. (Figs. 13-14.)

The splints illustrated in Fig. 15 (a) (b) show devices arranged so that when the jaws are closed these sliding metal flanges force the fractured jaw into perfect alignment with the upper. Fig. 15 (d) (e) shows another form of the same appliance but this time so adjusted that the jaws are slightly apart, the intention being to provide for any accidental occurrence that might result from sea sickness and which would be a menace to men with jaws firmly fastened with the teeth in contact. Fig. 15 (c) shows another form of splint with little hooks along each jaw by which with the appliance cemented into place the tying of ligatures between the small hooks that are arranged for this purpose will hold the jaws firmly in good alignment with always the possibility that the jaws may be released in case of emergency by cutting the ligatures.

While there is a measure of similarity between most of the plastic operations and certain well known methods are variously used in cases for which they are adaptable, there are nevertheless such differences between the conditions of practically all cases that each becomes individual in the requirements for its treatment. It is the recognition of these distinctions and the measure of the operator's ability to meet their surgical requirements, that govern the final result. The individual preferences of one operator might not be at all vital or essential for another who might meet the desired end in quite a different way. In my own experience I have found it necessary in some cases to plan the details of the operations as the work proceeds trusting to judgment of the tissue as actually found in the course of the operation to determine the best method of procedure particularly with reference to the extent with which free incisions must be made, the size, thickness and character of the flap and similar considerations. This is usually the case if the field of operation is one in which previous operations have been performed or if through extensive injuries there has been marked change in the tissues at the operative site such as extensive scar formation, disarranged muscular alignment or any conditions which render the structures to be operated upon uncertain in character. Under these circumstances there is always danger that if incisions are made or the flap fashioned according to some preconceived idea of what ought to be, disaster may follow because the conditions are actually changed and what might be done in the way of surgical operative treatment with quite normal conditions is found to be impossible for the abnormal situation that must be met, but if in performing the operation the operator feels his way along stretching and testing fibers of resistance, observing muscular activity that may be antagonistic and in various ways judging as he progresses with the operation as to the best manner in which to proceed, just how far the resistance of circulatory and other influences

Fig. 12.

A

B

One of the author's cases grafted according to the Albee method with a complete tibial bone graft. (a) Shows case before bone graft was inserted. (December 1, 1918). (b) Shows case after insertion of bone graft. (January 15, 1919.)

may be ignored or their indications followed and in other respects adapting the operator to the conditions as he finds them, good results are much

Fig. 13.

Pseudarthrosis at the symphysis of the lower jaw of long standing. In this case there was also a congenital fibrous band extending from the jaw to the clavicle, causing deformity shown and rendering it impossible to hold the head comfortably in an upright position. The divided jaw was fixed with a splint attached to the teeth.

more safely guarded than would otherwise be the case. In certain other cases the form outline of the proposed flap or of the graft must be very accurately decided upon in advance and followed religiously throughout the operation. Recognizing this difference it is my custom to make radical distinction between these two types of cases and when practicable I carefully prepare a pattern of the exact size and form of the flap or graft as may be and for greater accuracy and convenience use metal patterns. The metal being cut in size and form to conform to a pattern already worked out in tin foil, paper or other suitable material which can be laid upon any surface and the exact form and measurements secured allowing of course approximately a third and sometimes a little more for the contraction and alteration of the transposed tissue. To the metal form a piece of wire is soldered in such manner as to enable it to be placed upon the surface from which the flap is to be cut and held firmly in place while a knife is run around to mark the outline after which the flap or graft can be cut in the usual manner.

To summarize in conclusion the principles which should govern the selection of a method for plastic, facial or maxillary reconstruction are as follows:

1. The form of overlying facial soft tissues is

Fig. 14.

Same young woman as shown in Fig. 10, after the insertion of an osteo-periosteal bone graft. A shaving from the tibia placed with the periosteum faced outward and the bone inward on the inside of the jaw, a second thin osteal graft placed with the periosteum inward and the periosteum sutured to the mandibular periosteum according to the method advocated by Le Maitre, after which the overlying tissues were closed in such manner as to remove the depressed scar. The neck is also shown after correction of the defect by a transverse incision at a point just above the thyroid cartilage through the fibrous band and after freeing the surrounding tissue the skin was drawn from the central portion of the incision above and below upward and downward until when brought together the line of incision was perpendicular instead of parallel. A slight trimming of the skin at each end of the suture line was necessary in order to complete the outline of the neck.

necessarily dependent upon the underlying bony framework. When the form of the jaw outline cannot be restored by bone grafts or cartilage transplants, then a suitable artificial appliance should be placed so that this form may be restored, and the soft parts moulded to fit over these surfaces, and held in suitable form thereby after operation if necessary.

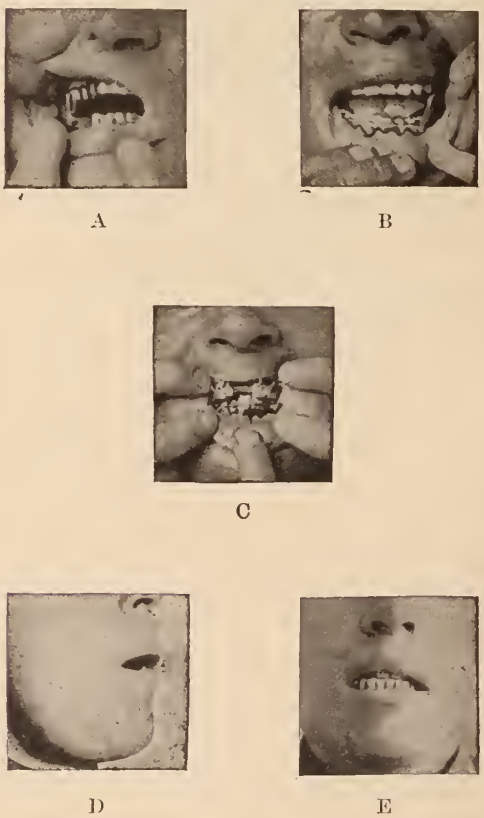
2. No tissue or other anatomical structure should ever be transposed or transplanted unless it be apparent that it is absolutely impossible to close the defect by the aid of adjoining structures.

3. The nearer the operator can come to restoring normal functional activity by the correct align-

ment and attachment of the muscles of the affected part, the greater will be the certainty of a good cosmetic result with continuance of improvement as time goes on.

When anatomic integrity is violated by the introduction of foreign tissues or mal-muscular attachments the effect will not be so good and unsightliness will usually become more and more apparent as time goes on.

Fig. 15.



(A) and (B) Flanged splints to correct jaw alignment. (C) Splints on both jaws with ligatures to hold mouth closed. (D) and (E) Flanged splint permitting only partial closure of the jaws.

These rules according to my belief form the basis of all the governing influences that affect operations for harelip, cleft palate and similar congenital defects and they are just as true when the deformities are due to war or other injuries.

THE EVACUATION OF THE WOUNDED IN BATTLE.*

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The term "battle" may be taken in the broad sense of the word to embrace the modern conception of warfare, as exemplified both in trench fighting and in the open method, which latter was forced upon the boche with the advent of the American Expeditionary Forces overseas. In former wars the open method was chiefly in vogue and it no doubt would have been so in this World War had not the English and French "dug in" and stopped the mad rush of the German army across Belgium and France. From then on the battle line or trench line became more or less fixed, neither side gaining much advantage over the other except in certain "pushes" during the two and one-half years before America joined the Allies.

During this period of semi-stationary warfare the medical departments of the French and English armies learned many a hard lesson. The results of their experiences and mistakes were good object lessons for us of the American army.

In former times the medical department of an army was a minor consideration, a necessary appendage, not receiving much attention from those in authority. The big idea was to fight battles and try to win them by superiority of numbers only. If the tide of battle turned favorably the lot of the wounded might be fairly good, though even then many thousands died where they fell through exhaustion and exposure. If the battle resulted unfavorably the sick and wounded were entirely "out of luck" with a resulting enormous preventable mortality rate. By the increasingly efficient work of the medical department, as shown by the records of the various war offices, the establishment of numerous "field ambulances," "casualty clearing stations" and general hospitals in the British army and similar stations in the French and Belgian armies, it was soon brought to the attention of the line that our corps was a needed and valuable adjunct to the welfare of an army.

With this recognition of the value of a formerly supposedly necessary evil, the general efficiency of the medical departments of all our armies was

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markedly increased and the salvaging of men by systematic methods became one of its greatest objects. The records of the statistical department of the Adjutant General's office give ample proof of the work accomplished.

The big word in the vocabulary of the medical officer at the front is *"evacuate."* An almost empty dressing station or field hospital during a "push" was the aim of every commanding officer and to this end every effort was made to accomplish it. The commanding general expects that the units of his division be kept as free from the encumbrance of sick and wounded at all times as conditons will permit, in order that the efficiency and morale of his regiments be kept up to the highest standard. Nothing is more conducive to the loss of a soldier's morale than the sight of his comrade lying wounded and helpless with no prospect of aid near at hand. The impulse to help his "Buddie" back to a safer place is very liable to bear fruit resulting in the loss of one and often more than one healthy fighting man from the line for every wounded man. One can readily see what would become of a fighting unit with the casualty list running in the thousands should this condition exist. Lines of communication would soon be clogged, caused by the numerous stragglers and malingerers. Even the M. Ps. would have complained of too much work! This is where the enlisted man of the medical department and the medical officer of the regiment are of such vital importance in maintaining the morale of the organization. When the soldier knows that there is help reasonably near at hand should he be in need of such aid, the last lingering measure of timidity is wiped out and he will go over the top or rush a wheat field peppered with machine gun fire with all the spirit of the Yank and get there unless "his name is written on a piece of Fritz's lead." The clearance of the battlefield therefore must be accomplished as quickly as possible as it is of the utmost importance to all concerned. To this end the personnel of the medical department have received special training.

The medical department assigned to a division is made up of about 100 medical officers and 1,200 enlisted men, the strength of the division ranging from 20,000 to 30,000 men. These officers and men are assigned to the various units of the division according to the tables of organization.

The division surgeon is in full charge of medical activities and it is through him that the commanding general keeps himself informed as to the status of the list of casualties during the battle period.

During the activities of the Thirty-second Division at the front we had both trench and open warfare evacuation problems to solve. The work in the trenched zone was relatively easy, a summer holiday compared with the work at Chateau-Thierry, Fismes, Juvigny and the Argonne. The quiet sector was a good school for all, and many a lesson was learned which came in good stead during the heavy days of a year ago. Here, the aid stations were located in dugouts, usually in the second line of trenches, from which the wounded were littered back to an ambulance head in a nearby town, there to be rapidly loaded in the ambulances and hurried to the field hospital or direct to the French Evacuation Hospital over excellent roads and in good time. Our field hospitals were semi-stabilized in this sector—that is to say, they were placed with the French Ambulances, quartered in wooden shacks and airplane hangars, where the *Medicin Chef* and his staff had been quartered for the last four years and where we would still be quartered had not the Germans made their tremendous drives toward Paris and Calais and the Americans been thrown in to fill the breach.

The work on the really active fronts was far different. In a battle formation the different units of the division are stretched along a front of varying lengths and depths, with the infantry occupying the front lines with their several lines of support. The artillery positions are a few kilometers in the rear. The engineer and signal corps troops are stretched along a line from the most advanced post to the division P. C. (Post de Command) and beyond. This means that several aid stations must be established in a terrain several kilometers in width and depth. The location of the "postes de secour" must be known to the division surgeon, the regimental and corps commanders, the commanding officers of the ambulance companies and the litter bearer sections of these companies, to more rapidly facilitate the evacuation of the sick and wounded to the rear.

Battalion or first aid stations are best established along lines of communication if possible. Protection from shell fire should be sought. Protection from the elements is of course important but is secondary to other considerations. Houses, sheds, caves or dugouts may be used. Houses and shacks

are great artillery targets, hence dangerous as collecting points for the wounded. Dugouts or caves are the best and should be used wherever possible.

The aid stations are manned by the regimental personnel of the medical department. Only the most necessary relief work is done at this station. Every wounded man receives a hypodermic injection of 1,500 units of anti-tetanic serum and his forehead marked with the letter T and the fact noted on the diagnosis tag. Fractures are splinted with the now famous Thomas splint; hemorrhage is stopped and the man gotten away as quickly as possible. The collection of the wounded is done by litter-bearer squads and linemen especially detailed for the purpose. Often the wounded man himself has been able to apply the first aid dressing in the metal packet before the arrival of aid. This knowledge has saved the lives of many by preventing infection at the source. In many instances no further treatment has been necessary at the aid station and the casualty has been evacuated as far back as the field or even evacuation hospital without interference.

The litter squads are kept busy bringing in the helplessly wounded; those able to walk are directed to the station. Here dressings are changed or adjusted if necessary. Not too many wounded should be allowed to collect at these stations as the enemy has a fondness for spotting assemblages and quickly planting a shell amongst them, an incident which has happened more than once on the Western front.

We once learned in our textbooks on medico-military maneuvres that the ambulance dressing station should be placed a mile or two to the rear of the aid station and that the wounded would be littered back this distance by the sturdy hospital corps man. The ambulance litter bearer was to search out trails by the most direct route if possible and mark them with bits of bandage tied to bushes and trees. Our experience in the medico-military maneuvres conducted under the able tutelage of Lt. Col. Munson and Major Frew at Leon Springs, Texas, in November, 1916, would take exception to this military procedure. It was proved that much valuable time was lost and an enormous amount of exhausting work was almost needlessly piled upon the litter bearer section. A carry of 1,000 yards over an uneven terrain often proved too much for the squad. This naturally deterred from the general efficiency of the evacuation service.

Profiting by these practical lessons the ambulance dressing stations were pushed forward as far as possible and wherever feasible were combined with one or more aid stations. This meant a combination of forces resulting in more rapid and systematic work. With the dressing station equipment at hand more elaborate work could be done without disturbing the wounded man more than once, a decided advantage in the soldier's favor. The ambulance litter bearers were thus able to assist the regimental men in scouring the field for the wounded and to assist in the first aid work. This combination of stations could of course only be accomplished where the natural facilities were present, such as a very large dugout or subterranean chamber or cave easy of approach from the front and easy of access from the rear by ambulances. Where this could not be accomplished, the ambulance dressing stations had to be located somewhat farther back where an ambulance head could with comparative safety be established.

Each division has a complement of four ambulance companies as a part of the sanitary train, three of which are motorized. There was many a time when we wished that the fourth was also motorized, when ambulances were scarce and the pressure of incoming patients great. Still, the horse-drawn ambulance had its place, especially for short hauls and over roads impassible for motors. They were found to be of great aid in transferring the sick from one hospital to another within the division area when speed was not an item to be considered.

With the division fighting on a brigade front all available transportation was needed for the evacuation of men to the rear, with two or more dressing stations in action alone or combined with aid stations. These feeders of ambulances and returning quartermaster trucks kept the wheels turning night and day, mostly night, so that at all times there could be seen and heard the continuous procession of the Red Cross-guidoned machines as they hurried back and forth with their living and sometimes dead burdens. The time consumed in the transportation of the wounded from the front, through the various stations and back to the Triage averaged from two to eight hours, depending upon the road congestion, the weather and the distance to be traveled. On some of the fronts the Triage was anywhere from ten to fifteen kilometers to the rear. In the Argonne, during the early days

of the fray the distance was very short, so short that the Triage and the field hospitals on duty were frequently in the neighborhood of Heinie's live ones and his duds.

The Triage is essentially French. It means a sorting station for the casualties as they are collected by the ambulance service. Here is where the work of final separation and selection of the fittest and least fit takes place. The Triage is an outgrowth or development of the old receiving ward of the field hospital but more highly perfected. It is in charge of a medical officer, one or more commissioned assistants, from two to three sergeants, selected privates first class and broad backed litter bearers. These men all work on shifts, usually of twelve hours.

As was stated above the final work of separation is done at this station. This requires a great deal of accurate clerical work in obtaining the data from the diagnosis tag and the patient and a quick eye and good diagnostic methods on the part of the medical officer on duty to at once separate the required cases. The receiving ward of the Triage is marked off in sections for the reception of the various classes of cases, such as seriously and slightly wounded, gassed, accidental injuries, psycho-neurotics (shell-shock), exhausted and sick. Besides the receiving tent there are the several wards for the temporary reception of designated cases to await further movement to the rear. In the meantime a kitchen in connection serves hot coffee and soup to those able to eat and the representatives of the Red Cross, Y. M. C. A. and K. C. put in their good work.

During most of our service at the front three of the field hospitals of the sanitary train were on the active list with one in reserve. As with the ambulance companies, three of the hospitals were motorized, the fourth "horseized". It was the lot of the motorized units to follow up the movements of the division, while the horse-drawn was established in the S. O. S. of the divisional area and functioned as a salvage depot for what cases could with safety be saved to the division. Two motorized hospitals worked together, the one receiving the seriously wounded, the other, the gassed, the psycho-neurotics and the sick. We usually established our hospitals fairly close together, avoiding any appearance of camouflage, and made good use of the Geneva Red Cross on tent roofs and surrounding premises. The surgical section was equipped with an X-ray apparatus which rendered untold service in "spotting" foreign bodies in the wounded and also furnished electricity for lighting the operating pavillion. The gas section was equipped with a hot water shower apparatus for the bathing of the gassed, especially the early mustard burns.

As soon as conditions permitted the hospital cases were prepared for further evacuation to the rear as the Triage was constantly feeding in more and more. The slightly wounded and the moderate cases that required no further surgical interference were never entered into the hospital records but were segregated at the Triage awaiting further transportation to the rear.

The Triage report was submitted to the division surgeon's office once every six hours, giving in detail the name, number, etc., of each case as entered, with the total number received up to that hour, transfered to field hospital and evacuation hospitals, died en route, etc. This kept the division surgeon in constant touch with the casualty situation, both as it affected our own division and that of other divisions, as many outsiders filtered into the Triage as into a friendly inn.

With the various classes of casualties in Triage, surgical, gassed and sick sections of the field hospital unit the next problem was that of their proper and rapid evacuation to evacuation hospitals as soon as the conditions would permit. According to Hoyle this work is properly out of the sphere of the divisional organization, it being performed by the evacuation ambulance section of the corps. But for one reason and another the advanced S. O. S. was unable to completely clean out our hospitals and Triage and keep them clean so that in self-defense it was found imperative that we continue our work of evacuation back of the field hospital lines. As all the divisional ambulances were constantly on the move between advanced dressing stations and the Triage we were obliged to resort to our own motor equipment, the three-ton Peerless truck. Each motorized unit had seven of these trucks, making a total of twenty-one at our disposal, though for the most part this number could not be kept on the road all the time, due to breakdowns, ration truck and medical supply service. This type of truck could carry twelve litter cases or from twenty to thirty sitters. The surgical cases received the first consideration of course, and were given all the available am-

bulances while the gassed and psycho-neurotics fell heir to the trucks.

The evacuation ambulance service as supplied by the corps was made up of special ambulance units, some of which had seen service with the French and Italian armies. In addition to the American units a French ambulance gave us a rather sporadic service, which, however, was valuable whenever it was on duty. The French ambulance is a larger machine than the American type and is capable of carrying five litter cases and one sitter (with the driver) or eleven sitters if no litters are housed.

One great obstacle that existed practically throughout the active period was the long haul between field and evacuation hospitals. It was nothing to make a drive of 20 kilometers and from 40 to 50 kilometers was not uncommon and to the stoical truck and ambulance drivers was but a part of the day's work. These long distances, of course, meant a return trip, time and gas consuming. The trucks were originally geared to 12 miles an hour but their timers usually had a faculty of being "lost in action" so some of them developed phenomenal speed. Heavy traffic, bad weather, lightless nights and poor roads had to be contended with. For the most part, unless the weather was too wet, the French roads were in pretty good condition, being kept in repair by American and French labor gangs. A round trip by truck could hardly be made in less than ten hours or more. Not more than one trip per truck in 24 hours could be expected unless the wheels were kept turning for the entire 24 hours. Had the evacuation hospitals been brought up closer much valuable time would have been saved. Through the efficient services of the divisional medical supply depot and the Red Cross, blankets without number were at our disposal and were used without stint in the evacuation of casualties. Through the same services we were able to obtain plenty of food supplies for the sick so that no one left the hospitals or Triage without first having had stimulating food and drink.

A while back I spoke of the horse ambulance company as performing a function, valuable, though modest. It was always the aim of the division surgeon to save to the division as many men as could possibly be done with safety, as once in the S. O. S. the man was practically lost to his old division, he rarely ever being fortunate enough to be returned to his former unit after the period of convalescence. To this end the horse-drawn field hospital was established in the S. O. S. of the divisional area and all cases of this type were transferred to this salvage hospital. On the Chateau-Thierry front these ambulances were kept busy night and day carrying the sick and exhausted to this hospital. On the Juvigny and Argonne fronts the horse ambulances were in constant use between the Triage and the advanced gas and sick hospital, a distance of a kilometer or more.

When the pressure of casualties from the front became too great, when, in spite of every effort of the officer in charge of evacuation to clear the wards they filled up just as fast, the quartermaster department had to be appealed to for trucks to help tide over the emergency.

The hospital train played a splendid role as a link in the chain of evacuation to the base hospitals. Both American and French trains were in use. The American type was constructed in England and was most modern in its appointments. Each train was made up of sixteen coaches with a capacity of from 300 to 500 cases. All evacuation hospitals endeavored to be on a railroad line or within easy reach of it as the bulk of further evacuation was made by train to the various base hospitals situated all over France. At Chateau-Thierry and Juvigny hospital trains were enabled to get up to within a short distance of the field hospitals, thus taking selected cases directly to the base hospitals from the division hospitals.

With the soldier safely aboard such a train his period of hospitalization had begun, a period which lasted anywhere from one to eight months or more. Once recovered sufficiently, the soldier was sent to a convalescent camp for rest and reconstructive exercise and thence to a replacement camp for ultimate return to some active unit as a replacement. Should the man not be able to classify as "A" he would be placed in Class B or C, depending upon the prognosis and kept in the S. O. S. for an indefinite length of time. Should the case be incurable the soldier would be placed in Class D and marked for immediate evacuation home.

The slogan of a well known pharmaceutical firm could well be adopted by the medical department in its work of evacuation of the wounded in battle and it is this: "Clean out, clean up and keep clean."

THE INDICATIONS FOR RADIUM THERAPY IN SURGICAL CONDITIONS OF THE PELVIC ORGANS.

BY HENRY SCHMITZ, A. M., M. D., F. A. C. S.,

CHICAGO, ILL.

A study of the biological reaction of tissues to radiation enables us to correctly interpret their therapeutic value and assists us in the choice of the quantity and quality of rays to be employed.

Since the effect of the action of radium is not only local but also general or constitutional, a correct knowledge and interpretation of the systemic action is necessary and very important. Clinical observations on the latter furnish a guide to the correct determination of indications and contraindications to radium therapy.

Not only that. A knowledge of the local and systemic reactions will materially aid us in the correct development of the technique of the application of the rays and in the probable prognosis of radiation treatment.

H. Dominici has made extensive and valuable researches of the biologic action of radium rays. He applied 100 mg. of unfiltered pure radium sulphate in a flat application of five square centimeters to the skin of a healthy animal. Within three weeks after the application he observed three varieties of changes. The epidermis and cutis which had absorbed all of the alpha and soft beta rays showed a necrosis and destruction of these structures. The subcutaneous tissue and fasciae which were subjected to the action of the medium beta rays were undergoing an intensive proliferation and retrogression to the embryonic state. The hard beta and gamma rays had become absorbed in the aponeurosis, muscle and even osseous tissues which evidenced metabolic changes. In from five to six weeks after the application of the radium the epidermis and cutis had regenerated while the other tissues did not return to a normal state for from six to eight months.

This observation demonstrated the variety of action of radium rays: Necrosis, stimulation of cell proliferation, embryonal retrogression and metabolic changes. It also showed the different behavior of various elementary cells towards the rays, which was termed by Dominici receptivity or sensitiveness and by Colwell and Russ selective absorption. Based on these facts Bergonié and Tribondeau formed the law: Immature cells, and cells in an active state of division are more sensitive to rays than are cells which have already acquired their fixed adult morphological or physiological characters.

The degree of selective absorption of rays by living cells depends on the particular phase of its life cycle, their kind, as well as the age of the host whom the cells inhabit. Cell elements which are

embryonal or undifferentiated are destroyed by a radiation which would only cause a slight reaction in the surrounding mature or highly differentiated cells. The basal cells of the epidermis and hairfollicles, lymphoid cells, sexcells as ova and spermatozoa, are readily killed by an amount of rays which would leave intact the neighboring mature cells.

Selective absorption also depends on the elementary variety of the cell, whether epithelial connective tissue or endothelial and on the different varieties within each species. Mature connective tissue cells are less receptive than epithelial cells. Epithelial cells of the basal layer of the skin are less sensitive than those of the papillae of the hairfollicles, they are different kinds of the same species. Lastly the tissues of

a child are much more easily altered by radiation than corresponding tissue elements in the adult.

These observations made on normal cells apply with equal force to abnormal cells and tissues, neoplastic as well as inflammatory.

Fig. 4. Microscopic section before treatment.

Remarkable examples of radio-sensitive tumors are ectodermal and basal celled epitheliomata derived from the basal celled layers of the epidermis, lymphadenomata originating from embryonal lymphcells, sarcomata derived from embryonal connective tissue cells with a simultaneous resorption of connective tissue fibrillae, cartilaginous and osseous tissues, fibromata in which the fibroblasts are present in large numbers and do not develop into highly differentiated adult cells and connective tissue fibers.

On the other hand squamous celled epitheliomata, fibrosarcomata, chondrosarcomata, osteosarcomata and fibromata retaining atrophic fibroblasts and abundant fibrous tissue are very refractory to radiation.

The action of radium rays on neoplastic cells is of an impeding, destructive and evolutional character. The radiation arrests the growth of the tumors, before it destroys them or renders them harmless by an evolutional process or metaplasia. Arrest of growth results from a cessation of the function of mytosis or destruction of the genuceptor. Destruction of tumor cells is either a direct or an indirect process. In the direct form the tumor cells undergo necrobiosis. The cytoplasm and nucleus disintegrate, the cells are absorbed by phagocytosis. In the indirect destruction a metamorphosis of the tumor cells precedes absorption. This consists in a hypertrophy of the cells, enlargement of the nucleus, nucleolus and even centrosomes, so they appear like pseudoparasites, achromatism, vacuolation and granulation of protoplasm, and so forth.

The evolutional influence of radium on tumor cells is evidenced by a retrogression or stimulation to mature development of the embryonic tumor cells. To understand this process we must have a clear conception of the formation, growth and function of a cancer cell. Tumor formation deprives the cells of their normal functions. They become "strangers" to themselves and to the mature normal cells from whence they originate.

The growth of tumor cells is not only the result of a proliferation of a single embryonal cell group but also depends on a retrogression or metamorphosis of normal mature cells to an embryonal phase after they have become included within the cancer tumor. By a process of evolution the embryonic abnormal cell is stimulated to grow and develop into a mature, highly differentiated normal cell.

Let us conclude with Colwell and Russ: Very rapidly growing cells are the most affected of any by radiations. However different rays give rise

Fig. 5. High power reproduction of area in Fig. 4.

to quite different effects upon one and the same variety of cell; they have a "differential" action and a careful distinction should be made between the "differential" action which different rays have

upon the same variety of cell, and the "selective" action which the same kind of radiation has upon the many different varieties of cells.

Microscopic examination made at various time intervals of tissues exposed to hard beta and

Fig. 6. Changes due to radium rays observed twenty days later in same uterus.

gamma rays reveals the following facts: Soon after exposure, a serous infiltration, an enlargement of the cell nucleus and cellbody, and a swelling of the endothelial cells lining the capillaries are seen. The lumen of the latter decreases in size. Within seven to eight days a degeneration of the cell nucleus is evidenced by a cessation of mitosis, a pyknosis, cytolysis, achromatism, vacuolation and granulation of protoplasma. A reactive inflammatory process also appears characterized by a lymphocyte and leukocyte infiltration and the appearance of numerous young fibroblasts. It seems as if the compact tumor masses break up in small particles separated from each other by this young connective tissue. The cell debris is rapidly cleared away by phagocytosis. The fibroblasts mature into connective tissue. It would appear as if the tumor had actually vanished. However this is not the case. On more careful examination, especially in regions more distant from the radium, epithelial cells are still seen, sometimes isolated, at other times in small nests. However they appear to be abnormal. Whether they are dormant or absolutely harmless or dead of course cannot be stated. However if radiation is not continued they may again assume renewed activity leading to a recurrence. See figures 1 to 8.,

Prime considers that these degenerative processes affect the cell nucleus in preventing mitosis. Such radiumized tissue will not grow when inoculated in mice. Radium does not kill the cells outright, but injures the nucleus in such a manner as to prevent further division which must eventually result in the death of the cell if its energy is expended in growth and division and not in a purely mechanical function.

The employment of radiations in any form leads to a constitutional reaction which varies in the time of onset according to dosage and character of the rays, the type and location of the tumor or tissue and the systemic condition of the patient. The constitutional reaction results from the changes occurring in the blood by the action of the radiation and from the degeneration set up in the growth by the rays which leads to an absorption of protein ferments into the circulation of the patient.

Some patients possess a marked idiosyncracy in the sense that the same dose of radiation will provoke a reaction, the degree of which varies with the individual. Dosage is a complex quantity and includes the quantity and quality of radiation, the distance of the radio-active sub-

Fig. 7. High power magnification of area in Fig. 6.

stance from the body surface, the area over which the rays are spread, the nature of the rays selected, the filter used, the tissue for which they are

applied and the time duration of the treatment. In describing and comparing results obtained we should always state these factors. We also must give an exact statement of the type and size of growth, its extent and the formaion of glandular and distant metastases. Finally, all general constitutional signs must be stated as pulse-rate, temperature, general nutrition of the patient, whether the disease has rendered the patient quite ill and moribund, a correct urinalysis and a complete examination of the blood, including a differential white count, and pulse and blood-pressure. These observations should be made and recorded before treatment is begun. They should be repeated at

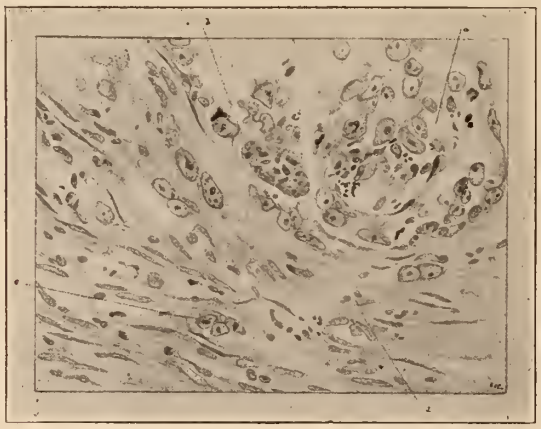

Fig. 8. Tissue from same uterus three weeks after begin of radium treatment.

daily intervals until such a time that they have returned to normal or that their permanent existence is unquestionable. The patient must again be subjected to the same routine examinations at each subsequent course. It is only in this way that we are able to correctly interpret the constitutional reaction and the efficacy of the treatment as regards the local diseased conditions and the general state of health of the patient. The pulse-rate gives us valuable information about the influence of the disease on the general condition of the patient. A rapid pulse is usually associated with an advanced cachexia or complicating infection. A rise in temperature indicates either a complicating infection or extensive destruction, necrosis and absorption of tumor debris. Abnormal constituents in the urine may mean organic kidney disease or secondary disturbances in the kidney set up by the influence of the tumor on the general constitution. Increase in the total nitrogen and purin base output is a direct result of radiation. Low percentage of hemoglobin, decrease in the number of erythrocytes and leukocytosis, with an increase of neutrophyles, may indicate a secondary anemia due to hemorrhage or cachexia, an active infectious process, and so forth. On the other hand a temporary leucopenia is caused by radiation. If it should persist it is an unfavorable prognostic sign. If all of these signs are absent the general condition of the patient must be termed good. If one or all are present they either indicate complications of the underlying disease or constitutional reaction from the radiation treatment. It is clear that we could not determine the presence of the latter if a painstaking examinaion did not precede each course of treatment.

Attention to changes occurring in the blood by the action of radiation was first directed by Senn in 1903 in cases of leukemia. This observation led to numerous investigations, the outstanding feature of which was that a dimunition in the total number of white cells results from the general effect of prolonged exposure to Roentgen and radium rays. The lymphocytes appear to be the most sensitive of the white cells, the number of which gradually decreases, while there seems to be an initial increase in the polymorphonuclear leucocytes. Chronic exposure of Roentgenologists to the ray almost invariably leads to a decrease in the number of erythrocytes, without apparently affecting their general health. (Aubertin.)

Stevens in an extensive study on the blood in cancer under Roentgentherapy derives the following conclusions: Roentgen rays, applied in repeated large doses, with deep penetration, profoundly affect the erythrocytes of human beings. For the first few days the lymphocytes are suppressed or destroyed by large doses of Roentgen rays in the treatment of cancer. In favorable cases this is followed by a reaction with lymphocytosis between the third to the seventh days, which may continue almost uninterruptedly till the fourteenth day, or it may stop shortly after the seventh day and reappear more strongly and persistently on or about the fourteenth day. There is a strong resemblance between the curves of these lymphocytic reactions and those which constitute the opsonic index. The treatment should probably not be repeated until the reaction is over. The repetition of the dose should probably be governed by the reactions in the blood as well as

in the skin, the former being much more sensitive than the latter. In some cases of cancer the Roentgen rays tend to stimulate a general immunity if lymphocytosis is an indication of immunity. The action of Roentgen rays in cancer, therefore, would appear to be two-fold: Local by its destruction of disease cells and general by stimulating lymphocytosis, and, consequently, resistance. Exposure to gamma rays of radium produces identical results.

The clinical symptoms of the systemic reactior resemble an acute intoxication. They include extreme prostration, together with such gastro-intestinal symptoms as vomiting, diarrhea and anorexia.

All observers agree that the intoxication results from the destruction of tissue cells by the ray, particularly tumor cells, on account of the much greater selective absorption the latter possess in comparison to normal mature cells. The liberated protein ferments are absorbed into the circulation, causing a temporary hypoleucocytosis. The decrease in the number of lymphocytes is the result of a directly destructive process of the rays. As the blood circulates through the area under treatment the highly selective absorption of rays by the lymphocytes causes their destruction. The tissue injury may be so great and tissue catabolism so increased that the intoxication may become so severe as to cause death.

The nausea and vomiting so often observed in patients during the time of treatment result from the effects of the rays on the vasomotor system and the inhalation of gases, especially ozone, liberated by the high-tension currents in the treatment room. They are often transitory and immediately subside after the treatment.

It is clear that an organism not weakened by the tumor disease is much more able to resist the toxic action of rays and much more capable to respond to the sudden demand on the organism for the complete disintegration and excretion of a large amount of the products of tissue breakdown. It must also be noted that treatments should not be repeated until the organism is entirely freed from the intoxication.

The treatment of cancer must be based on a painstaking physical examination. The findings obtained will enable us to determine: 1, whether the growth is localized in the invaded organ or region of the body; 2, whether it has extended into the neighboring organs and tissues; 3, whether it has invaded the regional lymphnodes; 4, whether secondary cancers have occurred in distant organs or tissues and 5, whether other organic and constitutional diseases, such as uncompensated heart disease, chronic Bright's Disease, pulmonary tuberculosis, diabetes mellitus and so forth, co-exist. Should the malignant disease be clearly localized it is curable. A complete surgical eradication will suffice to totally remove or destroy all of the abnormal cell elements. Therefore if patients afflicted with cancer disease would apply for treatment to the surgeon during the localized or incipient stage of the disease the question of how to permanently cure cancer would be a very simple one to answer.

However, clinical experience teaches that a radical cure of cancer is a difficult matter. For instance abdominal radical panhysterectomies for carcinoma of the uterus are followed by recurrences in about 60 per cent during the first year and in an additional 15 per cent during the second year following the operation. How may this deplorable state of affairs be explained? The cancer victim seeks relief at a time when the disease is not any more confined to the uterus. Obviously a careful physical and bimanual examination would have enabled the surgeon to recognize the advanced state of the disease and pronounce the case inoperable and hopeless from a surgical standpoint. In other instances extension of the disease into neighboring organs or tissues can not be determined in spite of an honest and careful investigation, a fact that is excusable. Again in other cases a correct diagnosis was not made at the first presentation of the patient due to carelessness or inability to make the examination. Such a condition is inexcusable and criminal. If physicians would resolve to arrive at a correct diagnosis in every patient in the shortest possible time, or failing to do so refer the patient to someone who could, the percentage of cures of cancers would soon increase. Finally a large number of cases remain that come to the clinic with advanced cancer disease. The patient, though ailing, did not realize the import of ill-health. It is, therefore, our duty to enlighten the public on the insidious onset of the disease, to teach it the cardinal symptoms that uterine cancer evinces, and to impress upon it the truth that cancer is curable if surgically eradicated in the beginning, that is, localized stage.

The examination of a cancer patient has as its

object not only the diagnosis but comprises the determination of the extent of the disease and the recognition of co-existing or complicating diseases. It would lead too far to discuss this subject in all its details, but we may enumerate the various steps of the examination. These are: 1, an exact history; 2, a careful general physical examination; 3, painstaking bimanual vaginal and rectal examination; and 4, special endoscopic examinations of the rectum and urinary system.

The digital rectal examination enables us to recognize invasion of the regional lymphnodes and the parametria. Cystoscopic examination reveals invasion of the bladder; urethral catheterization may elicit obstruction of the ureter either by pressure or cancer invasion. By a proctoscopic examination we may recognize an invasion of the bowel, a fact which would have escaped a digital exploration.

A localized cancer is curable and operable. A cancer that has invaded neighboring tissues or regional lymphnodes is doubtfully curable by operative measures and is termed a border-line case. A cancer which has extensively invaded one or both parametria or the bladder in front or the rectum behind is inoperable. Coexisting complicating diseases may render the patient a bad surgical risk and therefore surgical treatment is out of the question. The indications for operative treatment must be solely based upon these facts.

One hundred and sixty-five cases of carcinoma of the uterus came under my care from April 1, 1914, to October 1, 1919. Twelve of these cases, or 7.27 per cent, were clearly operable, and twenty of these cases, or 12.12 per cent, were borderline cases, hence doubtfully operable. In other words out of one hundred and sixty-five cases only thirty-two cases, or 19.39 per cent could justifiably be subjected to an extended radical extirpation. If the statistics on efficacy of surgical treatment were applied to these thirty-two cases, then at the end of two years only about fourteen patients would have survived without a recurrence:

"The total number of cures of 1,090 cases were 386 or 35.41 per cent of traced cases, or 19.32 per cent of cases operated on, or less than 11.72 per cent of cases applying for treatment." (Janeway-Surg., Gyn. & Obst., Sept., 1919.)

Indeed surgical treatment of cancer has been very unsatisfactory in the majority of cases and it is not surprising that we are straining all our efforts towards an improvement of the treatment of cancer in other directions. Since the advent of the modern transformer, the Coolidge hot cathode tube and the radio-active substances, chiefly mesothorium and radium, the discussion of the subject of cancer treatment has received a renewed impetus.

We must always realize that success in cancer treatment can only be obtained by the complete eradication or degeneration of absolutely all cancer cells present in the body of a victim of the disease. This principle must be observed if we are to expect results whether the means chosen are surgical or radiological. The danger in the treatment of cancer with surgery consists in the fact that we cannot always remove all tumor tissue. The vestiges left grow with an increased rapidity and by auto-transplanatation cause secondary growths in different parts of the body. The danger in the treatment of cancer with radio-active substances lies in the fact that proliferation is enormously stimulated if we cannot rapidly destroy all the pathological cells. An accelerated proliferation increases the danger of the formation of metastases. Earlier diagnosis has doubtless contributed to improving surgical statistics and is equally important for Roentgen and radium therapy. In these directions lies the hope of real advance in the therapeutics of uterine cancer.

The demonstrable reduction in the size of a tumor of a kind not to be attributed to the natural process of evolution of that tumor or its associated lesions is the one essential feature of effective therapeutic intervention. Circulatory changes in the tumor, the cessation of hemorrhage, the relief of pain, the restoration of a secondarily impaired function or local healing cannot be cited as an indication of the specific curative action of the agent employed. The growth may continue to advance in spite of their presence. We should exclude from the consideration of the curative action of an agent all of these secondary factors. The observation of the size of the tumor itself is the sole criterion on which we can place reliance in judging of the effect of the therapeutic measures.

Surgery will remove cancer tissue and organs but cannot change the characteristics of the abnormal cells. The hard Roentgen rays and the gamma rays of radio-active substances can modify cancer tissue and cells but cannot remove them.

Surgical eradication of carcinoma of the uterus is so frequently followed by a recurrence because either an auto-vaccination of active virile cancer cells took place during the operation due to the inevitable trauma, or vestiges of carcinoma cells have inadvertently been left behind. If the growth had been intensively rayed to destroy the boundless proliferative activity of the cancer cells the accidents of surgery would have been minimized or rendered impossible. An application of Roentgen and gamma rays of sufficient intensity and extent to include all of the tumor mass and the regional lymphnodes will stun the growth within ten to fourteen days on account of the arrest of mitosis of the carcinoma cells. If the case primarily was in an operable stage the excision should not follow. Another séance of combined Roentgen and gamma rays is given as soon as the patient has recovered from the effects of the operation.

The patient must be requested to return for re-examination every six weeks during the first year and every three months during the second year and thereafter on the appearance of even mild symptoms of ill-health such as painful urination, difficulty in defecation, vaginal discharge or the slightest indisposition. If a recurrence should take place the same plan of treatment is again adopted, that is a course of ray-therapy followed by the operation if the recurrence is operable.

In borderline cases the question arises whether an operation should be insisted upon, or whether it is preferable to confine one's effort to ray therapy. We had twenty cases in our total of one hundred and sixty-five. Thirteen were subjected to a combined surgical and radiological treatment, while seven were treated only with Roentgen and radium rays. Our results seem to indicate that the patients treated with rays fared better in both immediate and remote results than those treated with a combination of surgery and rays. However the time elapsed is not yet of sufficient duration to allow us to render a definite opinion.

In absolutely inoperable carcinomata of the uterus we solely have resource to radiotherapy. Should a local healing and a reduction in the size of the tumor ensue, so that the tumor seems to be localized within the uterus the question arises whether we should or should not resort to surgical eradication. Out of a total number of seventy-three cases we subjected thirty-six cases to operation, sixteen to panhysterectomies and twenty-one to very thorough vaginal cauterization with the hot soldering iron, while thirty-seven cases were treated with rays only. The results plainly are in favor of the last procedure. Only five patients remain alive in the first group, but thirteen in the second group. Thirty-two died or were not even improved by the combination treatment and twenty-four of the second class either died or were not improved. The duration of life following the combination treatment of those known dead is nine plus months, while it is twelve plus months in the third subgroup. Therefore the patients were not only unnecessarily subjected to severe physical sacrifices, but fewer survived the ordeal, and the duration of life of those, known dead, was also markedly reduced.

We next wish to discuss the technique of the ray-treatment observed in our clinic. We always use a combination of Roentgen and radium rays. The equipment used to carry out the Roentgen treatments consists of a transformer with an auto-transformer current controller and a Coolidge tube. We use two methods: The crossfire method with a large number of small fields and the homogenous method using two large portals of entrance.

The crossfire method is carried out as follows: The Coolide tube is charged with a current of five milliamperes of ninety kilovolts as determined with the auto-transformer control. The rays are filtered through an aluminum plate of 4 mm. thickness and a sheet of sole leather. The focal distance is seven inches. The number of fields are from seven to twelve in the suprapubic region and from four to eight fields divided over the perineal, sacral and buttocks regions. Thus from ten to twenty fields are used. Each field is one and one-half inch square. The duration of the application is ten minutes over each field, but may be extended to thirty minutes without causing serious injuries in the skin. The erythem dosage obtained within ten minutes above the filter is six and on the skin surface one, or eighteen and three respectively if thirty minutes are used. Therefore a total of sixty to three hundred erythem doses is given during each séance of treatment. The ten minute séances are repeated after fourteen to twenty-one days for three times.

The homogenous method is carried out in the

following manner: The Coolidge tube is charged with a current of five milliamperes of a current of one hundred to one hundred and twenty kilovolts controlled by the auto-transformer. The filter consists of a 1mm. copper plate and one thickness of sole leather. The focal distance is twenty-four inches. One field nine inches square is used anteriorly and another one posteriorly over the sacrum. The application to each field is about one hour. The erythem dosage on the skin being 1.25 E. The difference in intensity of the ray at the skin level and the posterior pelvic wall is negligible. Therefore practically the same stream of rays passes through the pelvic structures assuring a complete and uniform penetration.

We are at work building an apparatus that will deliver a current of 150 to 180 kilovolts and a tube that will carry this load. We are convinced that results will materially improve with the use of the latter method.

The method of measuring the erythem dose also is very incorrect and we are engaged at present in measuring the rays delivered at the posterior pelvic wall by a specially constructed ionization chamber that can be inserted in the rectum. It is connected with an electrometer provided with an indicator registering the number of electrostatic units obtained within a known time period.

In stating dosage of gamma radiations of radium we must observe:

1. Quantity of radium in milligrams of the element.
2. Filter, rubber filter and other wrappings used, such as gauze.
3. Distance of radium from area to be treated.
4. Time duration of exposure.
5. Intervals between each series of exposures.

In estimating the dosage in a given case, we must always consider that the cancer must be completely destroyed and that the dose applied must not produce serious injuries of the surrounding healthy tissues and organs which would render illusory the first object. The minimum dosage for destruction of cancer epithelium is on an average half as large as the minimum dose for the destruction of healthy skin epithelium. Exceptions are adeno-carcinomata. The maximum dose is that necessary to destroy cancer without injury to healthy tissues. It can be obtained only by intensive deep therapy in pelvic carcinomata. It is the object of deep therapy to influence by the rays deeply located pathologic processes in the body through layers of healthy tissue without permanent injury to the latter.

The maximum dosage can be determined only by the biologic measurement of each radium preparation. If fifty milligrams of radium element contained in a tube as usually employed in gynecological work are filtered through 1 mm. of brass, 3 mm. of para rubber, 5 mm. of gauze and a fingercot, then the maximum dose for healthy skin is one to one and one-half hours. The exposure causes no visible reaction. If the application is continued then a reddening of the skin occurs at about one and one-half hours, an erythem dose; at two and one-half to three hours it causes a blistering of the skin, a burn of the second degree, the lethal dose for healthy epithelium. If the application is continued for twenty-four hours then a burn of the third degree is caused in the epithelium, while the dose may be still considered lethal for connective tissue, i. e., the connective tissue is not permanently destroyed or damaged.

To estimate the maximum doses for the destruction of a uterine cancer we must recall to our mind the exact abnormal conditions found in the pelvis in this disease. The vaginal portion of the cervix lies in the interspinal line. The cervix and lowest part of the body with the parametria lies somewhat higher. Cervical cancers spread by invasion of the vaginal vault, by infiltration of the lymph vessels of the lateral parametria, the paravaginal tissues, along the sacrouterine ligaments to the pararectal tissues and rectum, and through the vesico vaginal septum to the bladder. The part of the pelvis between the pelvic outlet and the midpelvic horizontal plane contains all these structures and is the space which must be rayed. The transverse and antero-posterior diameters of the midpelvic plane are twelve centimeters in length, while the transverse diameter of the pelvic outlet is twelve centimeters and the antero-posterior diameter is eleven and one-half centimeters. Hence if radium is inserted into the cervical canal which lies in the pelvic axis, the rays must reach a penetration of five and one-half to six centimeters. We must avoid injuries to the ureters, bladder and rectum. They are on an average one and one-half centimeters distant from the cervical canal, if the hollow organs are empty. Should the bladder or rectum be filled, they are forced closer to the cervix and the distance is reduced by about one-half. Therefore it

is desirable that bladder and rectum be empty during the treatment.

We may overdose the depth of one and a half centimeter to such an extent that the maximum dose for normal epithelial tissue is obtained at one and a half centimeter without injury to the ureters, bladder and rectum. Thus we may use a dose nine times the maximum of a surface epithelial erythem dose. Observing the law of the inverse ratio, and stating that the intensity of the rays is 100 at the source of the rays, then it is one-fourth at a distance of one centimeter, one-ninth at two centimeters, one-sixteenth at three centimeters, one-twenty-fifth at four centimeters, one-thirty-sixth at five centimeters, and one-forty-ninth at six centimeters. Since the maximum lethal dose for normal epithelial tissue is reached with fifty milligrams of radium at two and one-half to three hours, it is attained in cancer tissue in about one and one-half hours. This we have repeatedly proven in skin cancers, where the depth of the tumor could be exactly gauged. Further if at one-half centimeter distance a destruction of cancer cells is obtained in one and one-half hours, at two centimeters it is obtained in six hours, at three centimeters in thirteen and one-half hours, at four centimeters in twenty-four hours, at five centimeters in thirty-seven and one-half hours, and at six centimeters in fifty-four hours. Therefore the application of fifty milligrams of radium element properly filtered must consume fifty-four to sixty hours to destroy all cancer tissue in a pelvic cancer. The maximum dose at one and one-half centimeters for the normal bladder and rectum epithelial tissues is reached at about twelve hours. We may assume that if a dose is applied for only ten hours it destroys cancer tissues within two centimeters while the healthy bladder and rectum epithelium is not sufficiently injured to result in permanent damage. If a sufficient interval is left between subsequent applications, the normal tissue regenerates, so it will bear another exposure without permanent injury, while the cancer tissue, however, is permanently damaged and cannot regenerate. Thus the plan of the intermittent application was developed. Fifty milligrams of radium element properly filtered are inserted on six to seven successive days for ten hours each day. Strictest asepsis must be observed. It is also advisable to maintain free drainage from the uterus. The rapid disintegration of cancer cells liberates besides antigens, hemolytic and proteolytic ferments. If drainage is obstructed or prevented they may lead to hemolysis and proteolysis and cause grave disturbances of the general health.

The reason then why we do not apply the total dosage in one sitting is to prevent destruction of healthy organs.

RESULTS.

From April 11, 1914, to October 1, 1919, one hundred and sixty-five cases of carcinoma of the uterus were treated. For a study of the clinical value of ray therapy, we have divided the cases into five groups:

Group 1. Cases which were clearly operable after a physical examination.

Group 2. Cases which were doubtfully operable.

- (a) Cases subjected to surgery and ray therapy.
- (b) Cases subjected to ray therapy only.

Group 3. Cases in which an operation was absolutely impossible.

- (a) Cases subjected to abdominal hysterectomy and ray therapy.
- (b) Cases subjected to vaginal cautery and ray therapy.
- (c)) Cases subjected only to ray therapy.

Group 4. Cases so far advanced that all treatment was hopeless. They were subjected to ray therapy for purposes of palliation.

Group 5. Cases that recurred after an abdominal panhysterectomy.

The following table shows the total number in each group and the results to date:

Group.	Total No.		Living.	Died.	No report or improvement.
1	12		10	2	
2a	13	20	7	3	3
2b	7		5	2	
3a	16		2	11	3
3b	21	73	3	8	10
3c	36		11	12	13
4	28		1	13*	14
5	32		5	11	16
	165		44	62	59

*Three died within a day or two after the treatment from severe toxemia.

A study of all the tables demonstrates at once the importance of early diagnosis and treatment.

We can hope for improvement in cancer cure statistics only by instituting measures resulting in an earlier recognition and immediate proper treatment of these carcinomata.

The clearly operable cases make a remarkable and favorable showing. There are two deaths in a total number of twelve cases treated. The cases surviving do not evidence a sign of recurrence at the present writing.

UTERINE CANCERS.

TABLE I. CLASSIFICATION.

Group I. Cases which were clearly operable after a physical examination.

Group II. Cases which were doubtfully operable. "Borderline Cases."

(a) Cases subjected to Surgery and Ray Therapy.

(b) Cases treated with rays only.

Group III. Cases in which an operation was absolutely impossible.

(a) Cases subjected to abdominal panhysterectomy and Raying.

(b) Cases subjected to vaginal cautery and Raying.

(c) Cases subjected to Raying only.

Group IV. Cases so far advanced that all treatment was hopeless. They were subjected to Raying for purposes of palliation.

Group V. Cases that recurred after surgical eradication.

Group.	Total number.	Living.	Died.	No report or improvement.
I.	12	10	2	
II. a	13	7	3	3
II. b	7	5	2	
III. a	16	2	11	3
III. b	21	3	8	10
III. c	36	11	12	13
IV.	28	1	13	14*
V.	32	5	11	16
	165	44	62	59

*Three patients died within a few days from treatment.

In Group 2 twenty cases were treated. Of these thirteen were subjected to operative and ray therapy. Of these seven are living while six either died or did not report. Of the seven cases treated only with rays five are living and two died.

It is impossible to state whether an operation should have been performed or not as the cases are too few and too recent to permit a conclusion. But it appears to us that surgical eradication does not materially influence the results for the worse.

It is not surprising that Group 3 should give us the largest number of cases, namely seventy-three. Of these sixteen cases were subjected to hysterectomy either before ray therapy was begun or after a local healing was obtained with ray therapy. The results were disastrous. Only two patients so far have survived the ordeal. Twenty-one cases were subjected to an initial vaginal cautery before radium was applied. Three patients survive to date, while the average duration of life in those known dead is twelve months. On the other hand eleven of the thirty-seven patients treated only with radium therapy are well at the present writing. The duration of life of those that died in class (a) is nine plus months, in class (b) twelve minus months, and in class (c) twelve plus months. In other words the patients in the latter class had a better chance all around than those in the former. We must conclude that if local healing is obtained, the tumor is arrested in growth and the infiltration of the parametria subsides, we should not subject the patient to an unnecessary operation.

Group 4 demonstrates one fact. An advanced cancer patient should be treated only with ray therapy to relieve the symptoms. This is all we can hope for. But little benefit is obtained for the efforts spent.

The intensive intermittent plan of treatment cannot be carried out in this class of cases as the rapid generation of tissue invariably causes a severe autointoxication. A period of from four to eight days should intervene between applications, that is until the reaction has subsided.

Group 5 shows a few brilliant therapeutic results. Recurrent carcinomata are very refractory to radium treatment. Comparing this group with Groups 1 and 2 we must state that a combination of surgical treatment and ray therapy shows such favorable results that surgical eradication of carcinomata must always be combined with an intensive ray treatment. If we procrastinate matters and postpone the latter until recurrences appear, and they do appear in about 75% of the cases within the first two years following the operation, then ray treatment also cannot improve the outlook in the majority of cases. It is our opinion that the sooner after operation the recurrence took place the better the palliation from ray therapy.

A good deal has been said about the efficacy of emetine given intravenously in carcinomata. We employed it in twenty-five consecutive cases, six of which were uterine cancers. We did not see a

single benefit occur to the patients, but found that they developed a severe weakness, a rapid and weak heart, loss of weight and strength and so forth, not to mention two immediate deaths attributable to the emetine and other transitory but alarming accidents.

Though radiotherapy was introduced at the Augustana and the St. Mary's Hospitals, Chicago.

TABLE 2. TIME ELAPSED SINCE TREATMENT IN LIVING AND DEAD.

Group I.					Group II. a.					Group II. b.				
Living		Dead			Living		Dead			Living		Dead		
yrs.	mths.	yrs.	mths.	No report	yrs.	mths.	yrs.	mths.	No report.	yrs.	mths.	yrs.	mths.	No report.
5	2	1	10		4	8	2		3	2			1	
4	9		7		2	9	1			1	6	1	2	
3	6				2	6	1	5		1	4			
2	5				1	7				1	2			
4	6					8				1	3			
1	8					9								
1						6								
	9													
1	3													
1	2													
10		2			7		3		3	5		2		
Total.....12					Total.....13					Total.....7				

TABLE 3.

Group III. a.					Group III. b.					Group III. c.				
Living		Dead			Living		Dead			Living		Dead		No
yrs.	mths.	yrs.	mths.	No report.	yrs.	mths.	yrs.	mths.	No report.	yrs.	mths.	yrs.	mths.	report.
	6		4	3	2	9	1	1	10	2	2		7	13
	4		2		2	7		8		1	2	2	10	
		2	7		2			2			10		8	
			5				1	6			10		2	
			3					3			10	1	4	
			5				2	1			8	2	1	
			7				1	8			5		8	
			3					6			5	1	3	
		2									4	1	4	
			10								3		8	
			8								3		10	
													2	
2		11		3	3	8			10	11		12		13
Total.....16					Total.....21					Total.....36				

Group IV.					Group V.				
Living		Dead			Living		Dead		
yrs.	mths.	yrs.	mths.	No report.	yrs.	mths.	yrs.	mths.	No report.
4			4	14	3	3		11	16
			2		3	1		5	
			1		2	4		1	
			5		1	4	1	7	
			5			10		8	
			7				1	4	
			2					6	
			2					3	
			2					8	
			0					4	
			5					9	
			0						
			0						
1		13		14	5		11		16
Total.....28					Total.....32				

to study its clinical value in cancer of the genital organs of women, many requests were naturally made to apply radium and Roentgen rays also in tumors of the neighboring organs of the pelvic cavity, namely the urinary organs and the rectum and sigmoid.

Many clinical observations made in the ray treatment of uterine carcinomata apply with equal force to cancers of the urinary system, while the technique employed in the former is of no value in the latter.

The fifty cases of urinary tumors may be grouped as follows:

	I.	II.
Tumors of Urethra:	Benign 4;	malignant 7.
Tumors of Penis:	Benign 0;	malignant 3.
Tumors of Scrotum:	Benign 0;	malignant 2.
Tumors of Prostate:	Benign 2;	malignant 12.
Tumors of Bladder:	Benign 1;	malignant 19.

Each group must be divided into several subgroups:

a. Cases clearly operable;
b. Cases doubtfully operable;
c. Cases far advanced and clearly inoperable, in which ray therapy was applied only for purposes of palliation;
d. Cases in which a recurrence occurred following a surgical excision.

Clearly operable cases must be subjected to operation, but should be preceded and followed by ray therapy.

Doubtfully operable cases, the borderline cases, should be treated only with radium. A recession of the growth so it is visibly or palpably smaller, or has become clearly limited to the organ, or has even entirely disappeared does not necessitate a surgical eradication now. If a surgical removal was attempted we always felt convinced of its uselessness, either the patient succumbed to the operation, or the trauma stimulated the tumor-cells to a renewed activity. Intensive ray treatments could not arrest the revived proliferation.

Advanced cancer disease cannot be subjected to ray treatment with any hope of improvement, a transitory relief from the symptoms may occur. One must be especially careful in the application of rays in this group of cases. The absorption of the tissue breakdown may cause such a severe autointoxication that the patient with lowered body resistance speedily succumbs to it.

Recurrent cancers should be subjected to excision if it can be safely done. The operation also should be preceded and followed by ray treatment. Otherwise the same rules hold good for recurrent cases as applied to primary borderline and advanced cases.

Table 5 shows the results obtained in all the cases. Each subgroup is again divided to indicate whether a combined surgical and ray treatment or ray treatment alone were employed. The cases were treated according to the indications cited before. The duration of life in each surviving case is given in Table 6.

TABLE 5. TUMORS OF URINARY SYSTEM.

Prefix I.—benign, II.—malignant growths.
Prefix a.—clearly operable cases.
Prefix b.—borderline cases.
Prefix c.—advanced and clearly inoperable cases.
Prefix d.—recurrent cases.

Urethra.	Total No.	Living.	Dead.	No report.
I. a. Operation & Rays.	2	2		
Rays only.....				
I. c. Operation & Rays.				
Rays only.....	1	1		
I. d. Operation & Rays.	1	1		
Rays only.....				
II. a. Operation & Rays.	1	1		
Rays only.....	1	1		
II. c. Operation & Rays.				
Rays only.....	4	1	2	1
II. d. Operation & Rays.	1	1		
Rays only.....				
Penis.				
II. b. Operation & Rays.	1			
II. c. Rays only.....	1	1		poor health
II. d. Rays only.....				
Scrotum.				
II. d. Operation & Rays.	1	1		
Rays only.....	1		1	
Prostate.				
I. b. Operation & Rays.				
Rays only.....	1	1		
II. b. Operation & Rays.	7	2	3	2
Rays only.....	1			1
II. c. Operation & Rays.				
Rays only.....	4	1	3	
II. d. Operation & Rays.	1			1
Rays only.....				
Bladder.				
I. a. Operation & Rays.	1	1		
Rays only.....				
II. b. Operation & Rays.	2		2	
Rays only.....	1		1	
II. c. Operation & Rays.	3		3	
Rays only.....	8	4	4	
II. d. Operation & Rays.	3		3	
Rays only.....	2	1	1	
Total	50	20	23	7

There were four benign tumors of the urethra, three of which were urethral caruncles that had been repeatedly subjected to operations but always recurred. The fourth case had an extensive varices of the entire urethral mucosa characterized by profuse hemorrhages following coitus. Applications of small doses of gamma rays corrected the pathology in each instance.

Seven cases of carcinoma of the urethra were subjected to ray therapy. Two of these were clearly operable, in one the growth was excised and radium and Roentgen rays applied afterwards; in the other, the growth, the size of a hazel nut, was located in the middle anterior urethral wall, and treated with gamma rays only. Both patients have remained free of recurrence for three years. Four clearly inoperable and advanced carcinomata were subjected to radium treatments. One has a complete local healing and is well one year and seven months at present writing. One recurrent cancer was treated, which has remained well two years and seven months now.

TABLE 6. TIME ELAPSED SINCE TREATMENT IN THOSE LIVING.

Location.	Kind of tumor.	Years.	Months.	Remarks.
Urethra	II. a.	3		
	II. a.	3		
	I. a.	2	10	
	II. d.	2	7	
	I. d.	1	9	
	II. c.	1	7	
	I. c.		3	
	I. a.		3	
Penis	II. c.		3	poor health
Scrotum	II. d.	5		
Prostate	I. b.	1	7	
	II. c.	1	4	
	II. b.	1	4	
	II. b.		4	
Bladder	II. d.	5		doubtful
	II. c.	4		
	II. c.	1	2	
	I. a.		9	
	II. c.		7	
	II. c.		6	

A recurrent sarcoma of the penis did not respond to treatment, the patient was very reluctant to have anything done for him. Otherwise the result might have been different. The extensive carcinoma has proven refractory to the rays. We anticipated this result based on observations seen in advanced cancers in other organs. The third case also is in an advanced state, hence hopeless.

One case of recurrent sarcoma of the scrotum was subjected to excision and ray therapy. The tumor was the size of a walnut and round celled. The patient has remained well for more than five years now. Another recurrent sarcoma of the scrotum that invaded the left regional lymphnodes and kidney did not respond to very intensive Roentgen treatment.

Fourteen patients with prostatic enlargements were treated. A benign hypertrophy has remained well one year and seven months. Seven doubtfully operable carcinomata were subjected to excision and ray therapy, two were well for one year and four months and four months respectively. One doubtfully operable case was treated with rays only but succumbed to anuria. The four clearly inoperable cases were rayed with radium and Roentgen rays, one has remained free of any recurrence for one year and four months. The one recurrent case was subjected to a combined treatment without any improvement.

One benign pedunculated tumor of the urinary bladder was subjected to dessication and radium application and has been well for nine months. Two borderline carcinomata were treated with operation and radium, and one with radium only. Both succumbed. Of the clearly inoperable cancers three were subjected to a combined treatment and died soon after. The other eight were rayed only. Four of these are alive, one four years, one one year and two months, one seven, and one six months. They are at present free of any sign of the disease. These recurrent cases were treated with the combined method without any improvement, while two were rayed only, one was followed up for three years, during which time he had no recurrence. He is said to be alive and well at present.

The technique of the ray therapy employed in these cases was as follows: Urethral carcinomata were subjected to crossfiring. All these cases were observed in females. A radium capsule of 50 milligrams element was filtered with 1.2 mm. of brass and 3 mm. of pararubber and placed in the urethra. Another like capsule was inserted into the vagina. The lateral and posterior walls were protected with 5 mm. leadplating and gauze. A dosage of 1,000 mghrs. will effectually destroy a localized growth. The application should not be repeated within six to eight weeks.

Cases of operable scrotal and prostatic cancers are treated by placing radium capsules in the

wound cavity at the time of the operation. While in the preoperative treatment or in the inoperable cases the radium is carried into the tumor masses by specially constructed trochars. The amount of milligramshours necessary to cause a complete degeneration depends on the size of the growth. Should the radius of the mass measure two centimeters a twenty-four hours' application of fifty milligrams element is deemed sufficient. This will suffice in the majority of the cases.

Bladder carcinomata should be subjected to a suprapubic cystotomy. The radium can then be placed exactly against the mass. A retention catheter must be inserted through the urethra to

TABLE 7. CARCINOMATA OF RECTUM.

Location.	Group.	Total No.	Living.	Dead.	No report.
I. Anal Canal.	a. Operation & Rays	1			1
	Rays only				
	b. Operation & Rays				
	Rays only	1			1
	c. Operation & Rays				
	Rays only	2	1		1
	d. Operation & Rays	1		1	
	Rays only	2		1	1
II. Rectum.	a. Operation & Rays	2	1		1
	Rays only				
	b. Operation & Rays	2		2	
	Rays only	1	1		
	c. Operation & Rays	2	1	1	
	Rays only	19	3	9	7
	d. Operation & Rays				
	Rays only	7			7
	e. Operation & Rays	2		1	1
	Rays only	2		2	
III. Terminal Sigmoid.	a. Operation & Rays	1		1	
	Rays only	2		1	1
	b. Operation & Rays				
	Rays only	1	1		
	c. Operation & Rays				
	Rays only	1	1		
	d. Operation & Rays				
	Rays only	1		1	
	Total	50	10	19	21

keep the bladder empty during the treatment. Ten hour exposures of fifty milligrams of the element are given. They should be repeated every other day, depending on the size and the extent of the growth. I always objected to the use of cystoscopes provided with special radium carriers as the treatment to be effectual must be a prolonged one, i. e., ten hours repeated three or four times at intervals of thirty-six hours.

Carcinomata of the posterior wall of the female bladder also were treated with crossfiring through the vagina.

The regional lymphnodes must always be subjected to a thorough course of Roentgen rays. The intensive homogeneous method is probably the simplest and most effectual. One field of a diameter of ten inches is used. The focal distance is 50 cm., the filter 1mm. copper and soleleather, the milliamperage five, the current 100 kilovolts. The application should last about two hours if a Coolidge tube is used. The dosage thus obtained is about 1.25 E.

Carcinomata of the terminal bowel must be divided into those of the anal canal, the rectum and the terminal sigmoid. The anal canal reaches up to the level of the apex of the prostate in the male and the perineal body in the female. The rectum extends from this point upwards to about the middle of the third sacral vertebrae, while the terminal sigmoid comprises that portion of the bowel within the two inches above the rectum.

The anal mucosa is formed of squamous epithelium devoid of glands, the canal being 3 cm. long. The rectum is lined with cylindrical or cuboidal epithelial cells containing mucous glands of the tubular variety.

The lymphatic system of the large bowel is very inactive. Carcinoma remains a local disease for comparatively long periods of time.

An early diagnosis of cancer of the terminal bowel is equally important as in all cancers. Careful exploration of the rectum should be practiced in all patients presenting themselves not only with rectal diseases but with disturbances in the pelvic organs and the intestinal tract. The examination must always include an inspection with the proctoscope.

Up to October 1, 1919, fifty carcinomata of the terminal bowel were treated in our clinic. Seven of these or 14 per cent occurred in the anal canal, thirty-seven or 74 per cent in the rectum and six or 12 per cent in the terminal sigmoid. Of the anal carcinomata one was clearly operable; of the rectal three, and of the sigmoidal two; i. e., 12 per cent of the total number. This low percentage is not to be wondered at as a great many cases are referred to our clinic on account of inoperability.

The carcinomata of the lower bowel also, must be divided into several subgroups for purposes of treatment as well as recording of clinical results.

The subgroups are the same as mentioned in the section on uterine carinomata, namely (a) clearly operable; (b) borderline or doubtfully operable cases; (c) clearly inoperable cases; (d) terminal cases, i. e., cases so far progressed that all treatment is hopeless; and (e) recurrent cases.

Table 7 demonstrates at a glance the results obtained: Ten patients have so far survived, nineteen are known dead, and twenty-one either

TABLE 8. CARCINOMATA OF RECTUM.

I. ANAL CANAL.

	Living		Dead		
Group.	yrs.	mths.	yrs.	mths.	No report.
a.					1
b.					1
c.	2	7			2
d.			2		1
Total...	1		1		5

III. TERMINAL SIGMOID.

a.	2	3	2	1	1
b.	3	2			
c.	2				
d.				5	
Total...	3		2		1

II. RECTUM.

	Living		Dead		
Group.	yrs.	mths.	yrs.	mths.	No report.
a.	3				1
			1		
b.	1		2		
c.	1	2	3		7
	1	9		½	
	1	8		8	
	1	6		2	
				7	
				2	
				9	
				11	
				6	
				4	
d.				6	5
				3	
e.			1	2	1
			3	2	
				8	
Total...	6		17		14

did not report, refused further treatment or were discharged as absolutely hopeless. The time elapsed since treatment in those living or dead is given in Table No. 8.

It is seen from these results that the same points observed in the diagnosis and treatment of carcinomata of uterus and bladder also hold good for cancers of the terminal bowel.

The efficacy of surgical treatment is best expressed by a report from the Mayo Clinic, (Mayo, Chas. H., Annals of Surgery, Feb., 1917).

"The operability of rectal cancer before 1916 was 53 per cent, since then 71.8 per cent. Of 753 patients 430 were subjected to a radical operation, the operative mortality being 15.5 per cent. One-third of the number of surviving patients have passed three years without a recurrence, and 28.3 per cent lived five years or longer," a total of about 112 of the entire number.

The technique employed in rectal cancers comprises a preliminary left inguinal colostomy, followed by the ray treatment. The colostomy should be performed under ether anesthesia. The peritoneal cavity must be explored in each instance. Frequently it is seen during such an exploration that a case appears to be operable. Since the operative procedure of excision is usually a combination of abdominal and perineal stages such a procedure is justifiable. The colostomy is performed by eventrating a loop of sigmoid or descending colon through a stab incision. A glass drainage tube is inserted beneath the loop through its mesentery. A week later an opening is established with an electrically heated knife.

The radium is inserted into that lumen of the bowel invaded by the carcinoma. The location and extent of the tumor has been previously determined by the proctoscope, which is graduated in centimeters. One must guard against injury of the bladder anteriorly. In the female the vagina is kept distended with gauze. A retention catheter must be inserted into the bladder. An application of radium should not last longer than ten hours, while the amount of element employed depends on the length of the tumor, i. e., for each 3 cm. twenty-five milligrams of element are required. The application really ought to be repeated daily for at least four successive days. However this cannot be done as experience has shown that violent and continuous rectal tenesmus results. A proctitis, the result of the radium burns, is also very troublesome. The tenesmus and profuse secretion are treated by enemas of sweetoil or liquid vaseline which should be retained over night.

Intensive Roentgen ray applications are also made. We are more and more changing the multiple small field method with short focal distance to a method in which we use only three large fields, two suprapubic about 10 cm. square and

one sacral. To each field we apply 225 M. A. M. of a 100 to 120 kilovolts current of five milliamperes filtered through 5 mm. of aluminum and a soleleather. The method is simpler and the results better.

CONCLUSIONS.

1. The biological reaction of cancer cells to radiation offers the best evidence of the therepeutic and curative efficacy of the gamma rays of radium and the hard Roentgen rays.

2. A study of the systemic and metabolical disturbances is essential from a prognostic standpoint.

3. The efficacy of the treatment must be based on the demonstrable reduction in the size of the tumor and not on the local changes and improvement in the subjective condition of the patient.

4. Considering that surgery can remove carcinoma tissue but not change the boundless proliferative activity of the cancer cell and that radium and the Roentgen rays will arrest the active mitotic power of cancer cells but cannot remove them, it is obvious that in the treatment of cancer disease we must resort to the combined method of surgery and ray therapy provided the case in question is a clearly operable one. However, in borderline and clearly inoperable primary and recurrent carcinomata we must confine the treatment solely to ray therapy. A hopeless case remains hopeless even if ray therapy has been carefully carried out.

5. The clinical results observed in the 265 cases would appear to be discouraging. Subtracting the 21 clearly operable cases we have 244 cases left that formerly would have been considered absolutely hopeless. Thirty-two of the 244 cases have survived a period of two or more years during which time they enjoyed perfect health and working capacity. Eleven of these have succumbed and twenty-one are alive. The result should encourage us to continue the work.

6. Ray therapy is still in a developmental stage. As experience enlarges we will be enabled to evolute an exact technique. Results then will be much improved.

RESULTS OF EXPOSURE OF ANIMAL OVARIES TO RADIUM.

Experiments on rabbits have convinced John M. Maury, Memphis, Tenn. (*Journal A. M. A.*, June 19, 1920), that a 600 mg. hour dosage of radium does not produce degeneration of the follicles of the ovaries.

RADIUM TREATMENT IN GYNECOLOGY.*

BY ARTHUR H. CURTIS, M. D.,

CHICAGO, ILL.

Radiotherapy is of material benefit in carcinoma, uterine fibroids, hemorrhage of the menopause, bleeding of the child-bearing period, and leukorrhea.

In the widely inclusive subject which is assigned to me, a few figures will perhaps illustrate more satisfactorily than extensive statistics, the amount of our confidence in the efficiency and value of this method of treatment. My associate and I have used radium for a period of five years. Each year there has been a relative decrease in the percentage of major operations, with a corresponding increase in the proportion of radium cases. In a practice of modest extent, we have now employed radium in slightly more than 350 cases; a considerable number of these have received many applications.

Uterine Carcinoma—86 cases. Very few cures have been obtained. This is in part ascribable to several factors: Until very recently only those with bad prognosis have been reserved for exclusive radium treatment. Post-operative radio-therapy has not been pushed to the limit of tolerance. In cases treated with radium throughout, we have been fearful of fistulae and other untoward results; in consequence, our dosage has been too greatly limited and treatments have been given too infrequently.

At the present, although our statistics are not attractive, experience supplies an ever increasing weight of favorable evidence. It is agreed that radium is the most valuable palliative remedy at our command. I am inclined to be even more optimistic and anticipate that radical operation will be entirely supplanted by radium treatment.

Different persons possess great variation in radium tolerance. Increased susceptibility to subsequent treatments is also frequent. One or two applications may be well borne; then a brief exposure, even after prolonged rest, produces an unfortunate reaction.

As a rule, it appears best to administer the maximum physiological amount of radium within a few days' time, this to be followed by many weeks of recuperation, with repetition of the treatment at the end of this period. Such series of treatments

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*Read before the Milwaukee Medical Society, March 9, 1920.

I believe should be continued indefinitely, much as we give salvarsan in the treatment of syphilis.

In the average case, a first treatment of 2,500 to 3,500 millicuries is ordinarily very well borne. Buried emanation or radium element introduced directly into the tumor have manifest advantages. We use needles for this purpose.

Extreme caution is imperative if adjacent viscera have been extensively invaded. Otherwise fistulae develop, the patient is in constant discomfort, and the prognosis is made materially worse.

To patients with widespread regional metastasis we hesitate to give radium (except enough to stop bleeding and discharge) for at least two reasons: Firstly, pain is increased, apparently due to inflammatory reaction and to subsequent scar formation; secondly, prolongation of life adds to the period of suffering.

Fibroids: 62 cases. These have been selected cases. All tumors have been of moderate size and nearly all patients have been treated because of hemorrhage. Myomectomy or hysterectomy has thus far been given preference in younger women, in tumors of large size, and in cases with other pelvic lesions.

Except in very few instances no attempt has been made to avoid bringing on the menopause. Treatment has consisted in curettage, with intrauterine application of 50 milligrams for a period of 20 to 24 hours.

It is always possible to stop the hemorrhage. Decrease in size of the tumors has varied considerably; shrinkage is usually sufficient to be easily demonstrable on palpation.

Subsequent hysterectomy has been resorted to a few times because of symptoms from pre-existing pressure or adhesions.

Radium makes possible a revival of treatment by myomectomy. Favorable cases may have the larger tumors removed and thereafter go through pregnancy, with the assurance that radium will obviate the need of a second operation if other fibroids develop subsequently.

Menopause symptoms, which sometimes occasion much annoyance, have been controlled by fresh corpus luteum or ovarian residue. The latter has recently been particularly helpful.

Hemorrhage of the Menopause: 81 cases.

Bleeding is invariably controlled in these cases. Our technic has been essentially that used for uterine fibroids.

It should be mentioned that in all of these cases the flow may persist, or may even be exaggerated, for two months following treatment.

"Idiopathic" Hemorrhage: 29 cases. This group includes those patients who, in the absence of gross pathologic changes, suffer from excessive flow during the child-bearing period.

Most of such cases are ascribable to physiologic disturbance of, or pathologic interference with the ovarian function.

Many of these patients dread artificial menopause, and delicate management is required to preserve menstrual function. For example, in a given case menorrhagia may be due to psychic disturbances which produce chronic pelvic congestion. Treatment with radium decreases the menstrual flow to normal. Thereafter, if the cause of functional disturbance is removed, amenorrhea may follow.

Again, women in the upper thirties, particularly unmarried women, are prone to menorrhagia. Sometimes the bleeding is a precursor of the menopause. Certain of these patients are not relieved with moderate doses of radium. Others are particularly susceptible and menopause is unexpectedly ushered in.

Still again,—small doses may have no appreciable effect. After two or three applications the flow may increase rather than diminish. Another treatment is given and the menopause follows. The increased flow was a warning of an impending menopause.

Two patients with idiopathic hemorrhage may react quite diversely. Equal applications may cause a return of normal menstruation in both cases. Two years later one may have a return of menorrhagia; the other may go on to early menopause.

Certain facts are helpful in the management of these idiopathic hemorrhage cases. Firstly, organo-therapy occasionally makes radium unnecessary. If radium is used, an amount in excess of 1,000 mc. may introduce the menopause; women over 38 are particularly susceptible. Increased flow after treatment suggests a possible menopause as does also an increase in blood pressure. From the standpoint of ultimate results it is preferable to give repeated small doses, e. g. 300 mc., at intervals not more frequent than once in three months, without control observation of blood pressure and subjective symptoms.

Chronic Leukorrhea: 36 cases.

In a bacteriological and histological study of the entire endometrium obtained from 118 uteri removed at operation, I found that chronic infection of the body of the uterus is not frequent. Chronic endometritis, independent of active infection of adjacent tissues, is practically to be ruled out as a clinical entity.

The cervix, on the other hand, is open to bacterial invasion. It is lined with mucus-secreting glands which are prone to become permeated with infection. Strictures and stenosis are surprisingly frequent.

Dilatation of the cervix and introduction of radium up to the internal os destroys these infected glands. If combined with proper treatment of the urethra and destruction of Skene's ducts, we have a very efficient means of handling this trouble.

CONCLUSIONS.

1. Radium is the best palliative remedy at our disposal in the management of uterine cancer. Experience thus far indicates that it may entirely supplant radical operation in the treatment of this disease.

2. Radium absolutely controls uterine hemorrhage, irrespective of the cause. Production of the artificial menopause is best avoided by carefully controlled fractional applications.

3. Radium promises to be of great usefulness in the treatment of leukorrhea.

RADIUM IN DERMATOLOGY.*

BY H. R. FOERSTER, M. D.,

MILWAUKEE.

The treatment of skin diseases by radium is a mode of dermatologic therapeusis so recent in its introduction and up to the present time so limited in its opportunities of application that it is unwise for one to make positive assertions either extoling or condemning it as a modus operandi.

The obstacles in the way of progress, though not unsurmountable, are quite formidable and the mere acquisition of radium in sufficient quantity is but a single stepping stone. The following are among the many factors to be dealt with in superficial radium therapy:

The actual radioactivity of the preparation being used or its equivalent weight of radium element must be known. To know that one has a given weight of radium bromide or sulphate is not in itself sufficient, for two apparently identical amounts of either salt may vary tremendously in their radioactivity. The form of applicator must be considered. Flat applicators are desirable for surface work and these vary in their strength per unit area. When tube containers are used for skin action the apparatus should be placed at a distance to get a divergent radiation. The use of emanation will not be discussed in this paper. The character and thickness of the screen is very important, resulting in different biological reactions and varying the time factor in a manner that cannot be mathematically computed.

The duration of the application needed varies within surprisingly large limits with variations in other factors.

The biologic and physical characteristics of the preponderating type of ray is an important consideration which will be taken up later. The size, variety and the character of the lesion being treated and the condition of the normal structures surrounding it come into play. Previous treatment, recent or remote, should be thought of and if an irritating or stimulating application has recently been made the operator must proceed with caution. Idiosyncrasies of individuals and tissues are not negligible factors.

It is evident that considerable clinical experience is necessary, and that not alone experience acquired by others and gleaned from literature but experience acquired by the operator himself, if tragedies are to be avoided. And it must be considered in the light of tragedy if a permanent disfigurement is produced on the face by a procedure which was not necessary as a life-saving measure.

There are so many factors that come up for consideration in individual cases that no hard and fast rules can be laid down for the application of radium and carried out successfully. It is, however, very likely that the present chaos of conflicting opinions and opposing methods in radium therapy will give place to an orderly and logical technique, such as is obtainable in X-ray therapy, for radium and X-ray, though not identical, are analogous in their physical and biological action. Though the agencies in the former are spontaneously developed forms of energy acquired from a natural radio-active substance, and those of the

*Read before the Milwaukee Medical Society, March 9, 1920.

latter the product of human ingenuity, analogies may be drawn. The alpha rays of radium, which are atoms of helium gas charged with positive electricity, may be compared with the "canal rays" of an X-ray bulb, while the negatively charged beta particles of radium have their counterpart in the cathode rays. Sudden stoppage of the cathode stream results in the production of the X-rays. The atomic explosions of radium generating alpha and beta particles result in the production of non-material pulsations of the ether with a velocity equal to that of light and with enormous penetrating qualities. These latter are the gamma rays of radium, and while having a penetrating power 4 to 30 times as great as the X-rays, and a much shorter wave length, they are in other respects identical with the X-rays and produce similar chemical, physical and biological reactions. In therapy, however, the canal rays and cathode stream are not applicable so that X-ray apparatus furnishes for therapy only the X-rays, while the radium plaque or tube supplies a great variety of available beta and gamma rays, and when emanation is used the alpha particles are also available. These heterogeneous groups of rays enhance the value of radium by widening its sphere of usefulness, but also render standardization of technique the more difficult.

The biological reactions in either case are not produced directly by the incident rays but by secondary rays evolved by the absorption in the tissues of the primary beam. Absorption of gamma rays is said to give rise to beta and vice versa, while those secondary to the X-rays are said to correspond to cathode rays. The harder the ray the more penetrating it is and the less of it will bo absorbed in any given depth of tissue. Absorption also varies directly with the atomic weight of the interposed substances or tissues, and the greater the absorption the higher the percentage of secondary rays evolved. The intensity of the secondary ray is directly proportional to the intensity of the primary beam, also the harder the ray the less ionization produced per unit length, the ionization varying directly with the secondary radiation and probably caused by it.

Since it is considered that the biological reaction is produced by ionization of the cellular structures, though enzyme activation also comes into play, it is apparent that within certain limits the softer rays must have the more pronounced effect and that the hard rays are desirable only when their penetrating qualities bring them to necessary depths not attainable by those more readily absorbed. Besides a differential action on the part of different types of rays on the same type of tissue there is also a selective action on the part of the same kind of rays for different types of cells, and this latter fact is the all important one in therapy. So conclusive is the proof of this that it has been formulated into a law—the Law of Bergonie and Tribondeau—which states that immature cells and cells in an active state of division are more sensitive to radiation than are cells which have acquired their fixed adult morphological or physiological character. This fact is taken cognizance of in the treatment of cancer where it has been shown that malignant cells may be six or seven times as susceptible to destructive action by radiation as normal tissue. It has also been shown that a cell may vary in its susceptibility to a given type and dose of radiation during different phases of its life cycle.

It is often stated by ardent radium sponsors that radium burns are less severe and more amenable to treatment than those caused by the X-ray. This statement is justly contradicted by the Roentgenologists, and is very misleading, for various degrees of burns are produced by both agents and a radium dosage equivalent to the X-ray dosage causing a second or third degree dermatitis will cause just as severe, painful, recalcitrant and unsightly a lesion as the X-ray. Besides the various grades of inflammation caused by alpha and soft beta rays, many so-called radium burns are produced by the secondary rays from metallic filters and many mild X-ray reactions pass unnoticed because the field of application is not as sharply marginated as in radium treatment.

The differential action of radium requires a study of filtration, for where a certain type of ray is found desirable the others must be excluded. Where destructive action is wanted and the lesion is a superficial one, the radium is applied in its glass container or varnished plaque covered only by oiled silk or rubber dam, this giving a radiation of about 90 per cent beta, 2 per cent gamma, and 8 per cent alpha rays, the latter being lost before reaching the skin or absorbed by the skin surface. The soft beta rays are good only in very superficial work, being very readily absorbed, and are very destructive in their action because of their

high ionizing power. One-tenth of a millimeter of lead will eliminate all but the hard beta and the gamma rays, and gives a desirable type of radiation for dermatologic work. This type of radiation is called by the French the "Surpenetrant Ray." Differential action may produce a clinical inflammation, ulceration and necrosis, or only a microscopically recognizable modification of the cellular structures, and one can attempt a cure through either of these types of reactions by varying the filtration and the length of exposure.

It is in the treatment of the basal cell type of epithelioma, the so-called rodent ulcer, that radium has achieved its most marked success. Proper irradiation of these lesions by either X-ray or radium results in permanent cures in practically every instance, and in some case radium, by virtue of its greater variety of rays, is found relatively superior to X-rays. In this disease two modes of treatment are obtainable. One is based on a saturation dosage which aims to inundate the involved and neighboring tissue with the maximum amount of ray up to the point of producing a reaction in normal tissue. This treatment usually produces an inflammatory reaction appearing in a variable period of time, depending upon the filtration, and leading to ulceration and necrosis which results in a sloughing off of the diseased and some of the healthy tissue, and a permanent smooth, atrophic scar, with pigmentation and telangiectasis. The other method is the administration of carefully graduated and repeated doses aiming at a continued saturation of the malignant cells, but staying just short of the dosage which will cause erythema of the normal skin and its sequelae. This latter method results in a gradual disappearance of the lesion without inflammation, with a very good, frequently perfect cosmetic result, and a high percentage of permanent cures.

In the squamous cell type of epithelioma on the mucous membranes or on the skin, the results of irradiation, though at times highly successful, are also at times distinctly disappointing and surgical intervention, before or after irradiation, should always be given serious consideration. Some of these cases, that have resisted prolonged X-ray treatment, respond at times to radium, and excellent results are frequently obtained by combining the two and cross-firing the lesion.

Senile or seborrhoic keratoses, waxy or warty excrescences occurring most frequently on the faces of elderly individuals, and frequently giving rise to malignant growths, are very amenable to radium treatment if the soft unfiltered beta rays are employed.

Keloids and vicious cicatrices have been treated successfully with short doses of naked radium and fractional and massive doses of hard rays filtered through one-tenth to one-half millimeter of lead. The former method is admittedly the more dangerous, and its chief attribute seems to be more speedy resolution. The advisable dosage is that producing absorption without visible reaction, or telangiectases are likely to occur. The mercury vapor lamp in conjunction with radium or X-ray treatment has given excellent cosmetic results.

Nevi have been the target for much radiotherapy because of the spectacular results in successful cases. Its ease of application and the absence of accompanying pain, noise or other distracting circumstances, renders it a desirable treatment for infants and children. These lesions are also best treated in infancy because of their tendency to enlarge as the child grows, and because a scar produced at that time becomes relatively less conspicuous with growth of the surrounding parts. The treatment is based on a special susceptibility of the blood vascular and lymph vascular endothelium. After radiation there is a swelling and engorgment of the papillary and subpapillary vessels associated with edema and vacuolation of the endothelial cells, which later show nuclear and cytoplastic degeneration while the walls of the larger vessels become degenerative and invaded by leucocytes. Following this there is an increase of connective tissue which first reverts to an embryonic type, but later assumes the character of mature fibrous tissue, with however a different distribution than normally, forming a soft plastic scar covered with normal epithelium. If the dosage is excessive there is likely to be thrombosis of the blood vessels, with subsequent necrosis of tissue, involving the epidermis which, after an indolent course, leaves an unsightly scar, the skin of which is smooth, atrophic and devoid of hair and glandular structures. Even with careful dosage there is always the danger of producing trophic changes, with marked alteration in the color of the skin, and associated permanent pigmentation and telangiectasis. The hypertrophic vascular nevi respond favorably to lightly filtered rays in small doses, medium beta rays through three millimeters

aluminum. The cavernous nevi respond slowly to hard beta and the gamma rays, such as would be obtained through 0.1 millimeter lead, and the ultimate results are good. Subcutaneous nevi, especially on the cheeks and lips, lend themselves favorably to cross-firing, with hard rays through a filter of up to 2 millimeters of lead. The capillary nevi are quickly treated with carbon dioxide snow, though with more scarring results than following radium, while the port wine birth mark, or nevus flammeus, responds best to the mercury vapor lamp. Flat, smooth, pigmented moles are best let alone, or widely excised, while small hairy moles respond satisfactorily to electrolysis or CO_2 snow, and verrucous nevi also to snow, methods quicker and safer than irradiation. Moles, when treated with radium, should receive very soft rays in small, frequently repeated doses. Lymphangiomata are especialy susceptible to irradiation and screened applications, employing hard beta and gamma rays, result sucessfully.

Papillomatous warts, especially the periungual type which are so resistant to X-rays, are very frequently cured by a few applications of soft, unfiltered rays. Multiple sarcomata of the skin are adaptable to radium treatment and disappear rapidly under lightly filtered dosage. The keratoses and epitheliomatous degenerations developing on the sites of X-ray burns and on the hands of X-ray operators respond to the beta rays of radium, though the treatment seems paradoxical.

Lupus Vulgaris, while resisting all sorts of treatment, and at times responding favorably to various therapeutic measures, has also yielded to radium. Screened rays are best, and when the lesions are so situated that they can be crossfired, involution frequently takes place, associated with a small percentage of recurrences. Other forms of skin tuberculosis respond similarly.

Lupus erythematosus is often cured by unfiltered applications of radium, but is highly susceptible to inflammatory reactions with permanent disfigurement and with frequent neighboring recurrences.

The anti-pruritic action of radium is sometimes made use of in eczema and pruritus ani, being used in small doses of unfiltered rays in the former condition, and in quite heavily filtered dosage in the latter. But in eczema, like in psoriasis, which is also favorably acted upon by the soft beta radiation, numerous scattered lesions render the treatment impracticable, and recurrences are not prevented.

Leucoplakia of the tongue and buccal mucosa responds to radium, but danger of activating a potential malignancy advises a word of caution. In mycosis fungoides, best treated by X-rays, because of its extensive distribution and its amenability to this action, radium is of service as an adjuvant. Rhinophyma, scleroderma, xanthoma, acne keloid, adenoma sebaceum and xeroderma pigmentosum are among other skin diseases which have been successfully treated with radium.

In conclusion it may be remarked that while radium is in its early stages of development as a therapeutic agent, and while pioneer work must be done to determine its place in our therapeutic armamentarium, it is unwise to employ this agency in conditions amenable to other forms of treatment or to use it in responsive diseases with too much fervor. Work of this sort is best carried out in properly equipped research laboratories and hospitals, by men thoroughly conversant with the problems to be met, and the practitioner who wishes to use radium will aid progress in the right direction and will reflect credit upon himself by remaining within the bounds of conservatism.

X-RAYS IN DERMATOLOGY.*

BY CLARENCE ALLEN BAER, M. D.,
MILWAUKEE.

The X-ray has now been used sufficiently long as a therapeutic agent in dermatology to hold an established place. Like all innovations in treatment it was hailed at first as a cure all and much harm was done both to X-ray treatment and to patients by its indiscriminate, careless use. The methods of employment, the dangers and benefits, the selection of cases and so forth must be thoroughly understood in order to give this medium of treatment its place and proper due. Much good can be done by the X-rays therapeutically, many skin diseases can be cured thereby, but much harm can be done by its indiscriminate and careless usage. A physician must know his apparatus and his technique before he can hope to get beneficial results from the therapeutic use of the X-rays. He must also be able to diagnose his skin lesions accurately and be sufficiently acquainted with thorough general

*Read before the Milwaukee Medical Society, March 9, 1920.

diagnostic methods before he can hope to use the X-rays beneficially. A pruritus vulvae caused by diabetes will not be cured by X-rays; a pruritus ani caused by intestinal parasites will not be cured by X-rays; an epithelioma with extensive envolvement of regional glands will not be cured by X-rays alone; tuberculous sinuses and glands will not be cured by X-ray without general and hygienic measures, and so forth. The more clever a dermatologist is as a diagnostician, the better and more startling results will he get from the X-rays.

First: A case for Roentgen therapy must be selected carefully, and then the sort of raying must be decided. With an epithelioma, regional glands must be considered. Should the case be rayed or sent to a surgeon for thorough operative removal? Should a wide or narrow areola around the region be rayed? Should a hard or soft ray be used? Should an exposure of six minutes or ten minutes or fifteen minutes be given? Is the patient's skin dry or oily? Can the particular skin under the question stand a long exposure? Should the rays be filtered or not, and if so, by what thickness of filter? Is the skin blonde or brunette? Should a current through the secondary coil of one-half miliampere, or one miliampere, or 2 miliampere be used? All these questions and many more should be considered by the X-ray operator. Education in the mechanism of the rays and skill in their usage are necesary if good results are to be obtained.

At present two methods of dosage are employed, (1) the massive dose method in which the entire dose tolerated by the skin is given at one sitting; (2) the divided dose method in which short exposures are given at intervals, and repeated every few days until the desired reaction is obtained. Both methods are recognized as valuable. I personally prefer the divided dose method and use that method entirely. Short doses given at intervals until accumulative effect gives the desired reaction. In most skin conditions exclusive of epitheliomata, depilation, etc., the divided dose method is preferable. I confine myself entirely to the divided dose method, as the risks with the massive dose method are greater. A massive dose once given cannot be recalled, while if you see a reaction coming, after a few short doses, a rest can be given. All methods of measuring skin tolerance are unsatisfactory, experience and care yield more gratifying results. The chief dangers from the X-ray as a therapeutic agent are (1) X-ray burns, (2) permanent depilation, (3) telangiectases, (4) atrophy of skin. X-ray burns are often caused by the carelessness and inexperience of the operator, although certain persons have an idiosyncracy towards the X-ray and the physician is not to blame. If care be used and the operator knows his business and the dose, distance and time be intelligently decided, the danger of a burn is negligible.

(2) Permanent depilation is an unfortunate happening, when not desired. Scalp treatment with resultant permanent baldness is always annoying to both patient and physician. Permanent depilation on facial hirsutes is the result desired, however. Permanent baldness on scalp rarely results when the small divided dose is used, as treatments can be discontinued when the hair begins to fall and before the hair follicles are damaged to permanent atrophy. When a large massive dose has been given there is nothing more to do about it.

(3) Telangiectases occur *occasionally* and cannot be foreseen nor avoided. In using Roentgen rays on the face, it is well to tell the patient that such telangiectases do occur, although only infrequently.

(4) Atrophy of the skin can be avoided by exercise of reasonable care. I will now consider briefly a few of the commoner skin diseases that can be treated successfully by X-rays. I will say nothing about deep raying or post-operative raying, because I do not feel that these belong in the field of dermatology per se. And then finally I will show on the screen a few pictures of *epitheliomata* of the face, before and after treatment with X-rays.

Some of the common skin diseases that respond readily and successfully to X-ray therapy are: *Pruritus Ani and Pruritus Vulvae.* For many years these annoying conditions were treated more or less unsuccessfully—patients suffered for years and went from physician to physician without relief. Naturally it is necessary to eliminate all internal causes for pruritis such as diabetes, intestinal worms, hemorrhoids, etc. A few short treatments with the rays with a soft tube relieves the itching entirely and cases often go years without recurrence. One treatment often brings marked relief.

Seborrhea of the face.—The oily, greasy condition of the face disappears under treatment. A patient presented herself to me with the complaint

that the oil would ooze off her face and run down like perspiration. The statement was not exaggerated. Upon examination the face was very oily and large drops of oil were seen over the face. These would run off the face in tiny rivulets. A very unsightly and embarassing condition. The trouble had been present for years in spite of treatment. Eight X-ray exposures, short and mild, at intervals of three days caused atrophy of the sebaceous glands, so that the patient is no longer annoyed by oilness of the skin. This is an extreme case and mentioned here because of its unusualness. All cases of excessive sebaceous secretion do not respond to treatment that rapidly. *Acne* cases, however, respond well to X-ray therapy, especially if the acne be on a very oily skin. The theory is that stimulation from the rays is supposed to liberate some substance from the acne lesions that is absorbed and acts much like an autovaccine. Extreme care must be used in treating acne with X-rays because atrophy of the skin and teleangectasia might occur and would be most unfortunate on the face.

Keloids can be sucessfully X-rayed. No other method of treatment is as satisfactory. Keloids both spontaneous and post operative yield nicely to treatment, although many exposures in the divided dose method are necessary. Two cases of keloid of the chest took 12 and 20 exposures respectively and a large elongated keloid in a vaccination scar took 20 exposures. These growths are now level with the skin and have been so for several months.

Tinea tonsurrous and tinea sycosis are successfully treated by X-rays by causing epilation. The ring worm fungus, as you know, is along the hair sheaths and feeds on the hair. If the hair be destroyed, the parasite dies from starvation. X-rays give the easiest and simplest method of epilation, but care must be used in order to prevent a permanent baldness.

Chronic eczematous conditions can be readily cleared by X-rays where ointments and lotions used for years have failed to cure. Occasionally, remarkable results occur—almost miraculous, but as a rule several exposures (10 to 20) are needed. I recall a case of chronic eczema of the left inner lower thigh that had been present for twenty years, causing nightly and daily spells of itching, and had resisted constant treatment administered by many physicians during that time. Four X-ray exposures given during twelve days cleared the lesion and there has been no recurrence in six years. Telotiform eczema and squamous eczema and seborrheic eczema of the hands yield to treatments with X-rays more readily than to other forms of treatment. A few short exposures with a medium soft tube clear these annoying hand conditions rapidly and surely—often only three or four such exposures are necessary.

Angiomata and naevi can be cleared up by proper usage of the X-ray. The technique and dosage must be administered painstakingly. Pusey of Chicago has had perfect results in large naevi and angiomata—results that can be equalled in no other way.

Many cases could be cited and long histories given illustrating the effects of the Roentgen rays in the diseases already mentioned, and many other diseases particularly those belonging to the tuberculous variety, could be recounted, but such procedures would take too much valuable time. But a few words must be said about the Senile keratoses and epitheliomata and Rodent ulcers.

Senile Keratoses respond very readily to X-ray therapy. A few exposures, just enough to produce a slight reaction, cause the lesions to melt away. After the reaction has subsided, the lesion has disappeared, and the skin is left without a scar, and it is impossible to tell where the keratosis had been. The precancerous keratoses are made to disappear in this way, leaving no trace of the trouble. Mr. J., aged 69, had a lesion on the lower lip about the size of a ten cent piece—hard, indurated edge, elevated—a diagnosis of carcinoma had been made. Lesion had been present four months. No regional glands palpable. Four exposures during ten days produced a violent reaction. After three weeks the reaction had subsided entirely and it was impossible to tell by observation where the lesion had been. Patient has remained without sign or symptoms of trouble for many months.

Small epitheliomata yield to X-ray therapy nicely. And even large superficial carcinomata disappear. Mr. X., aged 70, was sent to me by a surgeon because the patient refused operation. There was a large cauliflower mass on the right ear, projecting out over an inch and about the circumference of a silver dollar. The mass was very foul smelling, bled freely, was painful—no one could doubt the diagnosis of a true carcinoma. The growth had been present four years, but had grown

rapidly the last two months, and the entire ear was swollen to three times its natural size. The patient refused to go to any surgeon for operation and begged me to treat him with X-rays. I told him I did not expect much from the rays in his case and that he was losing valuable time. The man was obdurate and with the consent of his surgeon who understood conditions, I began X-ray treatments. Nine heavy exposures unfiltered were given in 21 days. Then the intense reaction caused a pause of 17 days,—then 8 more heavy unfiltered exposures were given in 17 days—then an intense reaction caused a pause of thirty days. At the end of that time, the lesion had entirely disappeared, the ear was no longer swollen and looked like the left ear excepting that a small part of the upper ear was destroyed. Three more heavy exposures were given and the patient dismissed for observation. Too short a time has elapsed to be certain of a cure, but nothing outward has developed up to the present time—four months after treatment. Many case reports of keratoses and epitheliomata, and rodent ulcers about the cheeks, nose, and lips could be given, but time prevents.

I will show you on the screen a few cases of epitheliomata before and after X-ray treatments.

Thank you.

OTHER BACTERIA IN TUBERCULOUS HUMAN LUNGS.

John N. Hayes of Pittsburgh reports the bacteriological findings from the study of the lungs of 52 tuberculous patients who died and were autopsied at U. S. A. General Hospital 19, Otecn, N. C. A number of concomitant micro-organisms, streptococcus haemolyticus and viridans, staphylococcus albus and aureus, pneumococcus, micrococcus catarrhalis, Pfeiffer bacillus, etc., were encountered. He also examined many throats and sputa during life. He concludes that streptococcus haemolyticus was found in a large percentage of the throats and washed sputa. It was also found at autopsy in the caseous areas and cavities of the same patient's lungs. The author thinks it a probable factor in cavity formation.

Hayes, John N.: Secondary Invaders of Tuberculous Lungs. American Review of Tuberculosis, April, 1920, vol. IV. No. 2.

Settlement of 127,151 insurance claims, for death and total permanent disability, and representing a total value of $1,135,552,173.45, is announced by Director R. G. Cholmeley-Jones of the Bureau of War Risk Insurance. Only 5,119 claims are pending, and in these cases the claimants are beneficiaries in many instances residing in foreign countries where disturbed conditions render communication impossible.

It now requires only about five days from receipt of final evidence of death in an insurance case for the issuance of the first check, and frequently cases have been handled even more rapidly in the Compensation and Insurance Claims Division of the Bureau.

In cases of total permanent disability, men have been examined, the award made, and the first check placed in their hands, all within a very few hours.

ANOTHER SANATORIUM FOR TUBERCULOUS SOLDIERS.

According to an announcement made by Surgeon General Hugh S. Cumming, the magnificent tuberculosis sanatorium heretofore operated by the army authorities at Fort Bayard, New Mexico, has just been transferred to the United States Public Health Service, and will soon be available for treating discharged, disabled soldiers. Splendidly located, not far from Silver City, and conveniently accessible on the Santa Fe Railroad, this sanatorium has long been the pride of the army. The climate is almost ideal, in that it permits outdoor life for a large part of the year.

The Fort Bayard Sanatorium will provide the Public Health Service with 1,000 additional beds to care for its tuberculous patients. The present sanatorium at Deming will be held in reserve, specially for winter use.

At the Fort Bayard Sanatorium the Public Health Service will treat only ambulatory cases of tuberculosis, in which the prognosis is favorable. Patients will be admitted only after careful observation elsewhere to make sure that their condition is suitable for successful treatment at the high altitude of this sanatorium. In general, it is the policy of the Public Health Service not to move patients far from their homes, for experience has shown that such removal often has an unfavorable effect. For this reason patients for the new sanatorium will probably be drawn principally from the middle and southwest sections of the country.

The Red Cross Nursing Service was organized by Miss Jane Delano, to be available as a reserve for the army in case of war. At the outbreak of the late war, there were approximately 8,000 nurses available for duty. This number was increased to 35,000 after the entry of the United States into the war, and these nurses were in service either in military hospitals, in civilian relief work, both here and abroad, or doing recruiting for the service in this country, these being chiefly those not eligible for active military duty or waiting assignment in military hospitals. With the signing of the Armistice and demobilization of the military forces, comes the problem of how we are to care for the soldiers who, either through casualties on the battle field or disability contracted in military camps, will not be able to take up their work again for some time, if at all.

The work of giving hospital care and treatment to these men has been delegated to the Public Health Service and 52 hospitals have been established for this purpose. There are in the service now, approximately 1,000 nurses, the majority of whom have done military

service and who see in this work, a continuance of the patriotic and humane service for which Florence Nightingale gave the best years of her life, and for which Jane Delano gave her life itself.

The following are abstracts of articles in the issue of *The Journal*, Aug. 28, 1920:

TOTAL HYSTERECTOMY IN FIBROID TUMORS OF UTERUS.

The technic employed by John Osborn Polak, Brooklyn (*Journal A. M. A.*, Aug. 28, 1920), has been so planned as to obviate and overcome the criticisms of total removal and the claims for the incomplete operation; and the end-results have been so satisfactory that he has come to consider total hysterectomy as one of the curative measures that can be offered the woman with extensive fibroid disease. His technic is described in detail.

SALT CONTENT OF HUMAN MILK.

As the result of the examination of about 400 samples of milk taken from the first day to the seventeenth month of lactation, Warren R. Sisson and W. Denis, Boston (*Journal A. M. A.*, Aug. 28, 1920), found that after the first week, during which slightly higher figures prevail, the average chlorid content of breast milk varies but little, being about 50 mg. per hundred c.c. of milk. The authors feel that diet is not the essential cause in the variation in the chlorin content, and that some other factor must play an important part.

VALUE OF POSTMORTEM WASSERMANN REACTIONS.

For nearly six years the Wassermann test has been performed almost as a routine on the blood of subjects coming to necropsy in the pathologic laboratory of the University of Louisville Medical Department and of the Louisville City Hospital. The only variation in technic has been that in the last few hundred tests cholesterinized alcoholic antigens alone have been used, but at least two antigens have been employed in each set, and each antigen has been controlled with tubes containing double the dose of that particular antigen. No result has been considered if the control containing double the dose of antigen has shown any anti-complementary tendency. The results are reported by Stuart Graves, Louisville, Ky. (*Journal A. M. A.*, Aug. 28, 1920). The findings in nearly 500 necropsies in which Wasserman tests have been made postmortem do not conform to those of Symmers. Darlington and Bittman. In 73.5 per cent of 492 cases the postmortem serology harmonized with anatomic findings or clinical histories, usually with both. The serums were unfit in 9.9 per cent of cases, the incidence being nearly four times as much as in the last series as in the first two. In this series positive reactions obtained six hours postmortem agreed with positives antemortem reactions negative reactions twenty-four hours postmortem similarly agreed. In ninety controlled cases there were flat discrepancies between antemortem and postmortem Wassermann reactions in only two. 2. In 124 cases showing evidence of syphilis, postmortem or clinical, 137, or 90.5 per cent, gave a positive postmortem Wassermann reaction. Observation of more than 15,000 reactions as correlated to clinical evidence substantiates the belief that the Wassermann test is the most delicate single test for syphilis.

MILD CHRONIC NEPHRITIS IN CHILDREN

The two hour renal test has been used by Lewis Webb Hill, Boston (*Journal A. M. A.*, Aug. 28, 1920), in children as follows: The child is put up on a full normal diet containing a considerable amount of protein, especially with the noon meal. A capsule containing 1 gm. of salt, and a 2 grain pill of caffein sodium benzoate is given with each meal, to take the place of the tea or coffee used in the adult test diet. Here we have a diet containing a considerable amount of salt, protein and duiretic material, all of which will stimulate the kidney to its maximum efforts. Exactly 10 ounces of fluid is given with each meal, and no fluid or food whatever between meals. The urine is collected in two hour periods from 7 a. m. to 7 p. m., and the night urine from 7 p. m. to 7 a. m. Then all that is required is to record the specific gravity of each sample of urine. The normal response shows a wide variation in gravity between the different specimens; in fifteen normal children there was always a variation of at least eight points between the lowest and the highest. The night urine in normal children is small in amount, and almost always has a specific gravity of 1.020 or over. The child with damaged kidneys, on the other hand, is unable to vary the concentration of the urine in this way, and the gravity of the individual specimens may vary only one or two points. The fixation may be at a high or low level, and may be high or low in the same patient at different times. I remember testing one girl in 1915 whose gravity was fixed at from 1.005 to 1.007, and in 1917 the same girl showed a fixation at from 1.020 to 1.022. It is apparently the fixation of gravity which is important, and not the level at which it is fixed. In the treatment of chronic mild nephritis in children, Hill says general hygiene is of far more importance than the diet. While it certainly would not be wise to allow an unrestricted diet to these children, it is a worse mistake to restrict it too closely. There is no reason for omitting meat entirely from the diet, nor is red meat any less desirable than white. If a child likes his food very salty, this habit should be discouraged; otherwise there is no especial necessity for salt restriction. For the severe cases of chronic nephritis with edema, a low salt intake is, of course, desirable. Water is one of the best therapeutic agents for many diseases, and a nephritic child without edema should be encouraged to drink water in order to keep his urine at a low specific gravity, and to dilute the products that are excreted through it. The diet of these children is summed up thus: Meat, fish or eggs once a day; no meat soups; a moderate salt intake, and plenty of water. Otherwise the diet can be the same as for any other child.

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EDITORIALS

BENEFITS FROM MEETINGS OF PROFESSIONAL ORGANIZATIONS.

THE benefits of medical organization are so apparent as make it seem scarcely necessary to give them editorial notice. The following recent editorials however deserve reprinting:

(From the Journal A. M. A., Aug. 7, 1920.)

"The president of the American Bar Association,[1] in an open letter to the members, defines that organization as the "tie of fraternal interest in all that concerns the profession that binds it together." While the communication is addressed to members of the legal profession, its truth applies equally to physicians. The following statement regarding the value of the annual session is paraphrased but little in order that it shall appeal to Fellows and members of the American Medical Association:

The sight of the leaders of the medical profession is stimulating. It adds much to the interest with which a medical paper is read if the author is not an abstraction but a creature of flesh and blood, whose personal appearance is known and whose voice has been heard. . . . Of these things I am sure: that the sense of brotherhood and the belief in the friendliness and nobility of the profession will be strengthened by such contact, and that faith in the zeal and integrity of members of the profession will be justified by experience. The reserve potential strength of a profession like ours can be summoned to effective exercise only through an association, national in scope, and wielding the consolidated strength of a united and thoroughly patriotic organization.

The meetings of the constituent state medical associations and of the component county medical societies present opportunities both for an interchange of professional knowledge and for an appreciation of personality which must make all better fitted to render professional services to their fellow men."

[1]Carson, H. L.: Reasons for Joining the American Bar Association, July, 1920.

(From the Madison County (Ill.) Doctor, July, 1920.)

A member was asked recently why he had not attended any of our meetings for the past few years. He replied, "Well, I'll tell you, doctor, I was so awfully busy that I could not get away." I could not refrain from the meditation, "you confounded fool," too busy to take off a few hours in a year to listen to some abler man with an interesting message. Let us contemplate for a moment. It is the busy doctor who writes the books which comprise the guide to the successful practice of medicine. It is the alert diagnostician who fathoms the depths of physiology and pathology to discover the underlying cause of the disease and describes his conclusions as a further stimulus and help to the student of the science of medicine. It is the diligent searcher for truth who uses his microscope and records his findings for the guidance of the medical adviser. It's the vigilant bacteriologist who hails with delight the new discovery and puts into permanent record the knowledge gained for the further help of the scientist, the microscopist and the clinician, who teaches and

writes for the benefit of others. It is the skilled surgeon who delves into the bottom of injuries to relieve pain, restore health and save life, and who always finds time to witness the achievement of his fellow practitioner and listen to his best description and newer methods of the art. The thoughtful doctor writes the interesting articles for the journals of value and the persevering doctor does the excellent X-ray work for his collaborator. The trustworthy doctor listens earnestly to the teachings of tactful diagnosticians and talented instructors and thereby becomes a better practitioner himself; likewise by lending his presence, he ennobles the profession with qualities that inspire confidence and respect. THEY are the doctors who take time to listen to the wonderful discoveries revealed and the skilful work done by the truly busy doctor.

ACUTE SURGERY IN CHRONIC CONDITIONS.

DELAY in instituting proper surgical measures in acute appendicitis has been responsible for many disasters and has been justly criticised and condemned. So much so that in an effort to head off disaster and criticism it has become customary to institute radical operation as soon as the diagnosis is arrived at. Which in time has led to the interval operation after a definite attack.

Because of the favorable results in the above class of cases, the line of least resistance has led the extension of this form of treatment to one or more symptoms which might or might not justify the diagnosis of chronic appendicitis. Pain or discomfort in the right iliac fossa, with or without gastro-intestinal symptoms many times lead to the snap shot diagnosis of chronic appendicitis with the usual unsatisfactory result following such diagnoses.

In matters as important as health one regrets that such a supervising authority as existed during the war could not be extended to a peace footing.

For example:

A soldier home on a furlough complained of pain in abdomen, consulted a physician who made a diagnosis of appendicitis and advised operation.

His commanding officer was notified and the following laconic reply was received that is well worth repeating, and operating surgeons might well learn it by heart to many times ask themselves in the absence of some other authority: "Telegram concerning E. M. received. If appendicitis is acute may operate. Complete clinical history with diagnosis and method of arriving at diagnosis required and must satisfy local military surgeon. Answer what action you are taking."

Suffice it to say that the man was referred to the Medical Advisory Board which in time reported a diagnosis of "Hysteria," which time has since proven to be correct.

It is difficult for the lay person to differentiate between various types of appendicitis and a return of symptoms after operation is considered as a failure (the freedom from a possibility of a serious appendicitis is not appreciated) and serves as a counteraction to the recognition and acceptance of the proper treatment in the definite or acute case.

F. G. C.

BIRTH STATISTICS AND INFANT MORTALITY.

IN the birth registration area of the United States 1,363,649 infants were born alive in 1918, representing a birth rate of 24.4 per 1,000 population. Of this total number of infants born alive, 1,288,711 were white, and 74,938 were colored. The total number of deaths in the same area was 1,014,620, or 18.2 per thousand. The births exceeded the deaths by 34.4 per cent. For every State in the registration area, for most of the cities, and for nearly all the counties, the births exceeded the deaths in many cases by considerable proportions. The mortality rate for infants under 1 year of age averaged 101 per 1,000 live births. The foregoing are among the facts brought out by the annual compilation of birth statistics by the Bureau of the Census.

The birth-registration area, established in 1915, has grown rapidly. It comprised in 1918, as in 1917, the six New England States, Indiana, Kansas, Kentucky, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Utah, Virginia, Washington, Wisconsin, and the District of Columbia, and had an estimated population of 55,813,339, or about 53 per cent of the estimated total population of the United States in that year.

COMPARISON WITH 1917.

The birth rate for the entire birth-registration area fell below that for 1917 by two-tenths of 1 per 1,000 population; but the death rate was

greater by 4.1 per 1,000 than in 1917. Thus the excess of the birth rate over the death rate for 1918, which amounted to 6.2 per 1,000, was somewhat less than the corresponding excess for 1917, 10.5.

INFANT MORTALITY.

The infant mortality rate—that is, the number of deaths of infants under 1 year of age per 1,000 born alive—throughout the birth-registration area as a whole was 101 in 1918 as against 94 in 1917. This is equivalent to saying that in 1917 of every 11 infants born alive 1 died before reaching the age of 1 year, whereas the ratio in 1918 was about 1 in 10. Among the 20 States these rates ranged from 64 for Utah to 140 for Maryland, and for the white population separately the lowest and the highest rates were 63 for Utah and 126 for Pennsylvania.

The infant mortality rates vary greatly for the two sexes and for the various nationalities. The rate for male infants in 1918, 111 per 1,000 live births, was nearly 23 per cent greater than that for female infants, which was only 90.4. When the comparison is made on the basis of race or nationality of mother a minimum of 71.4 is shown for the infants with mothers born in Denmark, Norway, and Sweden, and a maximum of 172.4 per 1,000 births for infants with mothers born in Poland, while for Negro children the rate was 163.

PLURAL BIRTHS.

The reports from the registration area show the birth of 15,342 pairs of twins and 147 sets of triplets in 1918—in all, 30,123 live births, or a little more than 2 per cent of the total number born.

NUMBER OF CHILDREN PER FAMILY.

The reports for 1,252,552 of the births occurring in 1918 contained information as to number of children in order of birth. Of these reports, 345,027 were for the first child born to the mother, 264,964 for the second child, 192,339 for the third, 136,366 for the fourth, and 95,963 for the fifth. In the remaining 217,893 cases, or 17.4 per cent of the entire number for which information on this point was obtained, the total number of children borne by the mother was 6 or more; in 38,343 cases it was 10 or more; in 1,820 cases, 15 or more; and in 58 cases, 20 or more. The total number of children ever born to the mothers of these 1,252,552 babies of 1918 was 4,109,309, or 3.3 per family. The reports for 1,189,682 mothers of 1918 contained information as to the entire number of children now living, and gave a total of 3,461,110, or an average of 2.9 living children in each family.

THE JOURNAL CLINIC

PRIVATE PRACTICE

OF

J. P. AND F. B. McMAHON.

RADIUM THERAPY.

INTRODUCTION.

Radium Therapy has now been practiced by a few competent men for about 15 years. Research conducted during these years and the number of cases treated have been sufficient to enable those doing the work to study its physiological effect, biological action, and its immediate and remote results. This study enables them to determine indications, contra-indications, and technique of application with sufficient accuracy to outline a working knowledge of the subject in a form which is no doubt sufficiently accurate to constitute a temporary standardization of treatment. This knowledge is available to all, but familiarity with it on the part of the uninitiated requires a careful perusal of the literature of radio therapy and an intensive course in the physics, screening and technique of application of Radium supplemented by at least one month's continuous observation in the larger city clinics where scientific radio therapy has been practiced for some time, especially those of Baltimore, New York, Boston and the Mayo Clinic at Rochester. Such study and observation will, we believe, convince any observing colleague:

That Radium has become a necessary adjunct to the armamentarium of modern medicine and surgery.

That it is a specific for vernal catarrh.

That it occasionally effects a cure where surgery would fail, or had already failed.

That it sometimes converts inoperable lesions into operable ones.

That it assists in insuring the permanency of cures effected by surgery.

That it frequently retards malignant growths, and controls some systemic diseases such as Leukemia, thereby prolonging life.

That it improves nutrition, and the general well-being of the majority who are judiciously exposed to it.

That it alleviates pain and vesicle and rectal tenesmus, controls hemorrhage and minimizes both the infectious cachexias and the malodors that accompany malignancies.

Inasmuch as this issue of the Journal contains three excellent papers on Radium Therapy, it is deemed advisable to devote the space allotted to the "Clinical Department" to report some of the cases appearing in a comparatively small private practice during the first six months of 1920, in which Radium Therapy seemed to be indicated.

Case No. 1. Mrs. B. Age 55.

Past history: Diphtheria—age 20. Scarlet fever—age 14. Typhoid fever—age 14. Period at 14 always normal. Married at 23, and was normally delivered of two children, both alive and well. Menopause, age 50. Had had one or two attacks of grippe annually for a period of years. Formerly suffered from sub-acute attacks of tonsilitis followed by mild attacks of rheumatism. Had suffered from indigestion, and other form of gastric distress which suggest the possibility of ulcers of the stomach, or infection of the gall bladder, or both. Had suffered from more or less frequency of urination for a period of years, which symptom was always aggravated during the colder winter months, and by grippe, tonsilitis, etc. Experienced considerable pain in the right leg, and right hip for a long time. Had had some insomnia from time to time, and suffered from periodic headaches since 1914. Headaches were not relieved by correction of errors of refraction. Had suffered from constipation for a number of years.

Present history: 10/1/19; frequency of urination has gradually become worse since 1915, so that during the late winter months of 1919, it was exceedingly troublesome during the night. Observed blood in the urine occasionally during 1918 and 1919. Urinalysis conducted by one of us at different times was always negative, with the exception that the urine was highly acid. Considerable quantities of blood were reported in the urine during July, August and September of 1919, but repeated examinations of catherized specimens were always negative, except that they occasionally contained a few R. B. C. A pelvic and rectal examination, 10/10/19, was negative, as was examination of the external meatus urinarius. Cystoscopic examination on the same date, showed a normal bladder and urethra except the presence of two papillomatous caruncles just inside the ext. sphincter.

Treatment: These caruncles were dissected under local anesthesia on above date, submitted to microscopic examination, and reported to be benign. The hematuria, however, was unabated.

11/16/19, 50 mgs. radium element screened by .5 mm. silver, and 4 mm. rubber were introduced just inside the external sphincter urethrae, and allowed to remain there for four hours.

History subsequent to primary radium treatment: The hematuria gradually improved so that at the end of three weeks it had practically disappeared, and there was a period of four weeks during which no blood was seen by the patient in the urine. Hematuria reappeared 2/17/20, and examination at that time developed the presence of a tumefaction of the size and shape of a lima bean, originating from the lower surface of the urethra just internal to the former site of the caruncles which had been dissected. This growth was giving rise to increased frequency of urination, was rather soft to the touch, and was temporarily believed to have been due to infected cat-gut introduced at the time of the dissection of the caruncles. Pressure on the tumor directing it against the symphysis caused it to collapse, and was followed by the expulsion through the urethral orifice, of a piece of tissue the size of a pea. This tissue was reported to be a papillary carcinoma. No retained catgut was found. A cystoscopy showed multiple papillomata at site of original caruncles and two small papillomata on the trigone.

2/17/20, 50 mgs. radium, screened by silver .5 mm. and rubber 4 mm. were placed at the former site of the caruncles, and left there for 11 hours, making a total of 550 mg. radium hours.

2/21/20, 50 mgs. radium screened by silver .5 mm. and rubber 4 mm. were placed in different sections throughout the urethra for a period of eight hours, changing the position every two hours, making a total of 400 mg. radium hours.

2/21/20, 50 mgs. radium screened by silver .5 mm. and rubber 4 mm. were placed on the trigone, and allowed to remain there for four hours, making a total of 200 mg. radium hours.

2/22/20, 50 mgs. radium screened by silver .5 mm rubber 2 mm. and gauze 8 mm. were placed in vagina and packed against the outer third of the urethra, and allowed to remain there for thirteen hours, making a total of 650 mg. radium hours.

Grand total radium element hours, 1,800.

History subsequent to second radium exposures: Slight constitutional reaction manifested by prostration, and nausea from 2/18 to 2/28. The irritability of the bladder was of course aggravated by the presence of the radium in the urethra, and in the bladder. There was no hematuria after the tenth day. The anterior half of the urethra was the site of swelling, induration and edema; and the anterior half of the vaginal wall covering the urethra was the site of redness, swelling, and a few blebs, followed by superficial abrasions. These changes appeared on varying days from the 5th to the 15th. The urethral induration, and tumefaction gradually disappeared between the 20th and the 45th days. From the 30th to the 90th day, the patient experienced considerable vesicle irritability and intermittent spasms, and, during the greater part of the time, a desire to void urine every two hours during the day time, and somewhat more frequently during the night. The desire was described as always eminating from the anterior urethra. From the 45th to the 90th day, she complained bitterly of intermittant attacks of burning along the urinary tract, but was unable to state whether

the sensation was in the bladder or in the urethra, or in both. This sensation of burning was worse when the patient was alone, and usually disappeared when her mind was distracted, or when she could be induced to go motoring, or to seek other changes in environment. The increased frequency of urination and sensation of burning gradually subsided, and had practically disappeared July 15, 1920. From this date the patient has been quite free from any form of inconvenience referable to the urinary tract, with the exception of the frequency of urination which dates back a number of years. She has gained fifteen pounds in weight.

The anterior urethra gradually became the site of a stricture which on the 90th day after treatment admitted a catheter only size 15 French scale. The stricture has been gently dilated from time to time without causing any bleeding, so that on July 27th, a dilator size 22 French scale was readily passed.

DISCUSSION.

Previous to the employment of radium and x-rays therapeutically, caruncles and carcinoma of the urethra were treated by fulguration, cauterization, and dissection. Employment of either of the latter two was followed by varying degrees of distress, and more or less permanent discomfort. The caruncles frequently returned, and the carcinoma nearly always did. By virtue of the exposed position of the female urethra, and the promptness with which symptoms of carcinoma in this organ are manifested, diagnoses should always be made before metastases has taken place. The therapeutic efficiency of radium in superficial malignancies, the ease with which it can be applied, and the readiness with which results can be observed, should make radium a specific in benign and malignant papillomata of the urethra and bladder.

The dosage in the above case may have been more than was necessary to effect a cure, and the silver screen should probably have been supplemented by a brass screen 1 mm. thick, thereby eliminating all of the primary rays, but the condition had developed very rapidly, which rapidity may have been due to the stimulating effect of the small initial dose of radium, and all concerned were interested in a cure, even at the expense of serious passing inconvenience. We believe that all urethral carcinoma present on 2/7/20 was completely destroyed and know that the stricture can be successfully managed.

The increased irritability of the urinary tract, and the mild radium burn sustained by the patient should impress upon those who consider undertaking radium therapy the necessity of thoroughly familiarizing themselves with the physics of radium, and the technique of its proper application, in order to guard against doing harm, before clinically employing it. Having secured such working knowledge as will guarantee against doing harm, the obligation immediately arises to so master the art as to insure each patient's being given the advantage of all that radium therapy can possibly offer.

Case No. 2. Miss W. Age 17.

Past history: Several attacks of grippe, and a severe attack of tonsilitis, 1916; appetite fair; sleep fair; stools regular. Patient rugged until menorrhagia developed, 1918. First period, 14; three during the first year, each one lasting from two to three weeks, characterized by the passage of numerous large clots. Four periods during 16th year, each likewise lasting two to three weeks, and characterized by large clots, and a much greater discharge during the night. Excessive loss of blood attended by general weakness, dizziness, and occipital headache, necessitating recumbency from five to ten days. During part of each period patient changed npks. six times nightly, and four times daily. Physical examination including position of uterus, and condition of adnexa, negative, except presence of a few small cysts of cervix uteri, and two mucous polypi protruding from external os. The corpus uteri was slightly increased in size and softer than normal, and the blood picture was that of moderate secondary anemia.

First treatment: Believing that the menorrhagia was due to the polypi a dilatation and curettage were advised; these were performed 4/3/19. The cervical cysts were dissected, and the curettage was negative so far as locating and removing additional polypi. Pathological report, negative. It was decided that the polypi were not responsible for the pronounced menorrhagia from which the patient suffered. Ergot, hydrastinin, calcium chloride accompanied by thyroid extract were taken for four months, and followed by some reduction in the amount of flow. During September, October and November, 1919, flowing became worse and stypticin was substituted for the above drugs without any appreciable improvement. During December, 1919, and January, 1920, periods lasted three weeks, and the quantity was as much as it had been at any time.

Second treatment: 2/7/20, radium 50 mgs. screened with silver 0.5 mm. and rubber 3 mm. were introduced into the uterine cavity and left there for five hours, making a total of 250 mg. radium element hours.

History subsequent to irradiation: Patient flowed from 2/11/20 to 2/20/20, the amount being about the same as usual in her case; again from 3/7/20 to 3/12/20 the amount being considerably reduced; no period between 3/12/20 and 5/12/20 when patient flowed normally for four days; 6/1/20, period four days; 6/22/20, period four days; 7/15/20, period three days; 8/17/20, period three days.

DISCUSSION.

Menorrhagia of indeterminate cause is a frequent symptom in girls during adolescence, and during the second and third decades of the menstrual cycle, as is also menorrhagia of supposedly demonstrable cause, the removal or correction of which not infrequently fails to relieve the symptoms. Extreme cases require and demand relief as did the above detailed case. The insuring of such relief heretofore necessitated the employing of means which were followed by psychic, nervous and physical symptoms, and complexes, which were often as distressing, and incapacitating as were the conditions for which they were employed.

Previous to the advent of radium as a therapeutic measure, the case in question would have been considered by some competent men sufficiently serious to indicate a hysterectonomy. This if refused would have been followed by advice to submit to such dosage of

Roentgenrays as would be necessary to control the menorrhagia, but which would have completely, and probably permanently, destroyed the function of the ovaries and brought on the attendant systemic disturbances which follow their destruction.

The case under discussion was considered to be a combined menorrhagia and metrorrhagia because of the large clots; and the metrorrhagia was supposed to be due to the polypi which hypothesis, however, fell unless polypi escaped the curette. Subsequent history, and further study suggested the possibility of an incipient submucous fibromyoma or an adenoma, but neither could be included nor excluded with any degree of definiteness by ordinary clinical proceedures. The patient did not impress one as being of the erotomania type or a masturbator. She was not the subject of overwork nor excessive exercise, and there was no evidence of scurvy, tuberculosis, increased vascular tension, blood dyscrasia, or tangible indications of hemophilia (the blood coagulation time was four minutes), any one of which may be the cause of so called idiopathic menorrhagia. Granting that none of the above enumerated conditions or causes was responsible for the symptoms, the only possible assumptions were—defective uterine musculature, insufficiency of the endometrium, abnormal nutrition of the endometrium, or a disturbance in the character of, or an imbalance in, the internal secretions. These include the secretions from the ovaries, thyroid, suprarenals, pituitary, thymus, mammae, and the secretions and excretions of the endometrium. These latter probably possess harmone functions themselves. Which ever one or more of the above mentioned causes of conditions may have operated in this case, it is likely that the function of the ovaries was most at fault, and, while little can be done to directly correct such supposed aberration in function, great care should be exercised to discontinue exciting causes, and to avoid aggravating the condition.

The treatment formerly employed was hysterectonomy or administration of large doses of Roentgenrays resulting in complete and permanent cessation of the menstrual function with its attendant psychical, nervous, physical, social and economic aberrations and occasional catastrophies. The greatest ill effect from the removal of the uterus is probably psychical, whereas the ill effect from the destruction of the function of both ovaries is physiological. They are more important as organs of internal secretion than is the uterus. The secretions which they furnish are independent of their function as producers of ova, and these secretions, which are probably produced by the interstitial cells, are absolutely necessary during the menstrual cycle, to the development and stability of the female characteristics and to the maintenance of women's psychical and mental well-being during approximately one-half of their lives. It has become quite well established that this ovarian function continues after removal of the uterus.

As a result of the above mentioned facts and reasoning, the advantage of a therapeutic agent which will control serious menorrhagia or metrorrhagia without injuring the ovaries is apparent. Such agent must operate without so interferring with the integrity of the endometrium, and the function of the uterus as not to render pregnancy and delivery at term an improbability. Gynecological therapy should always strive to conserve and promote woman's highest function,—motherhood.

Evidence that radium possesses such advantages has been adduced by competent gynecologists who have had sufficient experience to speak authoritatively. Should small, and if necesary repeated doses of radium fail to permanently control the symptoms of the patient under discussion, a second curetment will be advised. Should the menorrhagia still continue an abdominal bisection of the uterus permitting an absolute, definite diagnosis of the conditions of the endometrium and uterine musculature may become justifiable. This latter proceedure would make possible the removal of additional polypi and incipient submucous myofibromata and adenomata while the uterus would be left in situ so that menstruation can continue and pregnancy still remain a possibility.

Case No. 3. Mrs. G. Age 29.

Past history: Had had none of the acute infectious diseases. Had an appendectonomy in 1911, and a gastroenterostomy in 1913. Had a curetment and repair of cervix September, 1919, for menorrhagia which was improved for four or five months. Nervous exhaustion, and questionably mild toxic goiter which confined her in a hospital during July and August, 1919. First period at 16, periods recurring at 28 to 35 day intervals, lasting from five to eight days, accompanied by severe pain and mild leukorrhea. Periods appeared with increasing frequency since appendectonomy in 1911, so that they had been of the 28 day type for six years previous to November, 1917. Married November, 1916. Became pregnant early in 1917, but the pregnancy was interrupted at the end of the eighth week by her medical advisor because of supposedly intractable vomiting, and contrary to her own desires and judgment. Became pregnant again November, 1917, and was delivered of a full term normal infant Aug. 20, 1918, which infant was breast fed for three months.

Present history: 5/23/20, she stated that she always had rather profuse menstrual flow; that she flowed for four months or less continuously after the birth of her infant August, 1918; the last six periods had appeared at from two to six weeks intervals; that when the interval was six weeks the period lasted ten days; that recent periods had been followed by dizziness, headache, temporary loss of sight, interference with hearing and acute backache, all of which necessitated her remaining in bed from four to five days during each of the last five periods, and that the last period terminated 5/8/20. She submitted to a complete physical examination conducted by a well-known and competent clinical staff February, 1920, the conclusions of which were—that all of the symptoms were due to menorrhagia, and advised either a hysterectonomy or radium treatment. Inasmuch as the patient was desirous of bearing additional children, she would not consider the hysterectonomy, but desired such relief as might accrue from the use of radium in such dosage as would not interfere with the possibility of a pregnancy which could go to term.

Physical examination: 5/23/20. Physical condition generally depraved. Appeared to be asthenic and hyper-

solicitous about physical welfare. Chronic tonsilitis. Uterus somewhat symmetrically enlarged for a woman of patient's size, and softer than normal raising questions of extra uterine pregnancy, incipient myofibroma or hydatid mole. Pelvic organs sensitive to pressure. Blood presented picture of secondary anemia. Hemoglobin 60, color index 0.7, R. B. C. four million, leukocytes nine thousand, coagulation time three and one-half minutes. Blood pressure and urine normal. Wasserman negative.

Treatmnet: 5/26/20, dilitation and curettage. Repair of left side of cervix which had failed to unite after operation September, 1919. Slightly more than average debris was removed with the curette, and hemorrhage was profuse. Radium 40 mgs. screened by silver 0.5 mm., brass 1 mm. and rubber 1mm. were introduced into the uterine cavity, and left there for seven and one-half hours, making a total of 300 mg. radium element hours. The scrapings were sent to the pathological laboratory.

History subsequent to irradiation: 6/10/20, patient reported having experienced no immediate or remote local or constitutional reaction. 6/10/20 pathological report to the effect that specimen was questionably chorioepithelioma. 6/15/20 and 7/2/20, reported absolutely no improvement in menorrhagia. Family physician and writer both strongly urged securing another specimen of the endometrium and submucous tissue for histologic study, but patient has not as yet submitted.

DISCUSSION.

The principal complaints were those of menorrhagia and constitutional symptoms which could be explained by loss of an excessive amount of blood. The patient desired such relief as might be afforded without interfering with the possibility of pregnancy. The principles of normal and abnormal physiology of the ovaries, and the treatment of menorrhagia reviewed in the discussion of Case No. 2 are, of course, equally applicable in this case.

Physical examination under N 2O 2 and curetment outruled the possibility of a pregnancy, or hydatid mole. The scrapings removed from the uterine cavity were considered normal, in conseuence of which radium was introduced in an attempt to control the menorrhagia, and a specimen was sent to the pathological laboratory as a mater of routine. The pathologic report, if confirmed, shows that the patient is suffering from a comparatively infrequent disease which usualy develops shortly after the termination of pregnancy, but is seldom evidenced by symptoms enabling a diagnosis until the lapse of from six to eight months after delivery. It may develop so slowly as to cause no symptoms until three or four years after delivery. Every case of chorioepithelioma ultimately becomes one of the most malignant neoplasms encountered. Its presence would explain the menorrhagia, and its failure to respond to the dosage of radium ordinarily required for simple cases. The pathologic report is additional evidence, if indeed such be necessary, of the advantage accruing to patients from systematic routine laboratory examinations, and the added advantage enjoyed by patients from being cared for in hospitals which have adequate facilities and efficient personnel. It also illustrates the obligation of hospitals not having suitable equipment, and a competent laboratory staff to install the former, and secure the latter at the earliest possible date.

The pathologist, under whose direction the section was made, experienced difficulty in interpreting it, and he submitted it to a colleague of international reputation. This pathologist reported that while he could not state that the specimen was chorioepithelioma, he would not state that it was not. This inability to decide impresses upon one's mind; that corect interpretation is all-important; that repeated pathologic sections are sometimes necessary to a positive diagnosis, and that carefully assayed clinical symptoms should correspond to the reports from the average laboratories before deciding upon surgical proceedures, in cases difficult of diagnosis.

So far as radiumtherapy is concerned, should the condition prove to be benign the case illustrates the fact that different patients suffering from allied pathologic conditions characterized by the same clinical symptoms, require different doses of radium to effect a cure. It shows further that radiumtherapy must be based upon the conclusions of serious efforts to make refined diagnoses, and be supported by at least a reasonable amount of medical and surgical judgment without all of which radium may not only fail to afford benefit, but be followed by serious and irreparable harm.

It is hoped that the patient will submit to an early examination designed to definitely establish the presence or absence of chorioepithelioma. Should the findings be positive, and no evidence of metastases be present (metastasis in lungs is frequeut and detectable early by examination under x-ray), hysterectonomy will, of course, be advised. Should they be negative, the patient will be advised to submit to such small and repeated doses of radium as may be necessary to control the menorrhagia without destroying the endometrium, and to report frequently for examinations designed to discover evidence of the possible later development of positive symptoms of chorioepithelioma or malignant syncytioma.

CASE No. 4. Mrs. J. Age 36.

Past history: Had had diphtheria, scarlet fever, grippe, and occasional tonsilitis. First period at 13. Periods reappeared regularly at 30 day intervals and lasted four days each. Married at 20, and was delivered of one child which died immediately after birth. Underwent a trachelorrapy oophorectomy, and appendectomy at the hands of a competent surgeon, February, 1907.

Present history: 2/11/16. Has suffered from meuorrhagia of increasing severity since 1913. Early in 1916 it had become so severe that the patient flowed more or less during three weeks of each month.

Original physical findings: Findings were all negative except scar of previous laporotomy, and presence of a generalized myofibrosis uteri approximating the size of a three months' pregnancy and a blood picture of secondary anemia. A hysterectomy was advised by one of us, but was refused for the reason that, although the patient

was the widow of a physician, she had developed a mortal fear of operative procedures. Rest in bed and ergot and extract of cotton seed bark during the attacks of menorrhagia were prescribed, and followed for the greater part of a year with but little influence on the condition.

Later history: During 1917-1918, and the greater part of 1919, the patient was an ardent follower of Christian Science as a means of relief from the menorrhagia, but the later part of 1919, it became so much worse that she gave up hope that C. S. (?) would affect a cure, and reappeared at the office for professional services, accompanying the request with a statement that she must be relieved, and that any form of treatment prescribed would be followed with the exception of submitting to an operation.

Later physical examination: 10/25/19, all findings were negative with the exception of the previously mentioned scars and tumor of the uterus, the latter having increased very little in size during the preceeding three years; the patient was pronouncedly anemic.

RADIUM TREATMENT.

During the interval between the early part of 1916, when the patient was first examined by us and a hysterectomy advised, and the latter part of 1919, radium therapy was extensively employed in the treatment of fibroids of the uterus by a few competent men, and the results were so satisfactory as to justify considering it a specific for carefully selected cases. The case in question was considered to be in this class, and radium was accordingly advised.

10/26/19, radium 50 mgs. screened with silver .5 mm., rubber 4 mm., gauze 12 mm., were placed against the cervix and allowed to remain there fourteen hours, making a total of 700 radium element milligram hours.

11/8/19, radium 50 mgs., screened with silver .5 mm., rubber 4 mm., and gauze 12 mm., were again placed against the cervix, and allowed to remain there for thirteen hours totaling 650 radium element milligram hours.

2/18/20, radium 50 Mgs., screened with silver .5 mm., rubber 4 mm., were introduced into the uterine cavity, and allowed to remain there for 12 hours, totaling 600 radium element milligram hours.

History subsequent to Irradiation: Sodium bicardonate in doses of 4.00 daily were prescribed to be taken for a number of weeks. The patient experienced some nausea, general indisposition and weakness for three or four days after each treatment. Approximately one month after the first treatment, she observed increasing nervousness, and so-called flashes which became more pronounced as time went on.

Result: There was no appreciable improvement in the menorrhagia until two weeks after the second treatment, or 11/22/19, when the quantity of flow was estimated to be reduced about 33% which degree of improvement remained stationary until a month after the third treatment on 2/18/20. From this date the amount of flow rapidly diminished. The menorrhagia finally, and we believe permanently, ceased April 1st, 1920. Examination 5/1/20 showed uterus to have been reduced 50% in size and the patient stated that the nervous symptoms and flashes were gradually disappearing and that her endurance and general health were improving.

DISCUSSION.

The symptoms and conditions described above, of course, require relief and permanent cure if possible. While the operative treatment of Fibroids of the uterus by skilled hands is among the safest and most successful of major surgical procedures, its undertaking by the average surgeon in patients presenting mild constitutional complications, or associated pelvic or lower abdominal lesions is still fraught with some danger. The operative treatment of myoma uteri is contra-indicated when constitutional complications such as advanced cardio-renal complexes, and serious pelvic and abdominal lesions preclude the possibility of surgical intervention without danger of an immediate fatality or an aggravation of mobidity. In both classes of cases radium efficiently employed is the treatment of choice. Myomata ranging in size from a three to five months pregnancy and occasionally approaching that of a six months pregnancy causing menorrhagia or metrorrhagia and not accompanied by pelvic pain or serious pressure symptoms are amenable to radium therapy provided that no serious contra-indications to such therapy exist.

The contra-indications are: Severe anemia and other blood dyscrasias, pronounced intoxication, and cachexia following as a result of liquefaction, necrosis, or gangrene in the tumor itself, fibroids of a dense hyaline structure and those containing calcareous deposits neither of which respond readily to radium. Fibroids so large that their reduction in size would require exposure to such dosage as may of itself cause serious changes in contiguous organs and would necessarily be attended by proteid intoxications proportionate to the size of the tumors should seldom be treated with radium. Radium therapy is especially indicated in medium sized uncomplicated Myomata causing serious menorrhagia or metrorrhagia during the menopause period. It should be employed in such graduated and repeated doses as the individual patient can stand, and requires to control the excessive loss of blood. Radium is indicated for the control of menorrhagia and metrorrhagia from fibroids in all cases irrespective of size, when operation is absolutely contra-indicated, and when operation is positively refused, as in the above detailed case.

CASE No. 5. Mrs. M. Age 59.

Past History: Occasional mild attacks of grippe, and a severe attack of "Flu" during the early part of 1919. Mild attacks of tonsilitis. Period at 14, 30 day type, lasting 4 days. Married at 19, and normally delivered of four children. Menopause at 50.

Present history: 4/20/20 bloody discharge from the vagina, commencing September, 1919, and appearing with greater frequency as time went on. Pain in the pelvis and backache during two months preceding above date accompanied by weakness, and some loss of weight. Patient had recently consulted another physician who advised her that the symptoms were due to an old cervical laceration the repair of which would relieve them.

Physical examination: 4 20 20. Patient short and fleshy. All physical findings were negative, except that the cervix uteri was somewhat larger and harder than normal, was the site of an old laceration and superficial ulcerations which oozed freely on pressure, and the left broad ligament appeared to be slightly indurated in immediate proximity to the corpus. A section of the cervix was taken with a limited amount of traumatism, and under the microscope, it proved to be squamous cell epithelioma or epidermoid carcinoma.

Treatment: 4/23/20, radium 50 Mgs. screened with silver .5 mm. brass 1 mm. rubber 2 mm. were introduced just beyond the internal os, and allowed to remain there for 23 hours, making a total radium element Mg. hour dosage of 1150.

4 23/20, 4 steel needles of a wall thickness of .3 mm. and containing 10 Mgs. each of radium were introduced into the outer circumference of the cervix at four equadistant points, and allowed to remain there for 12 hours, making a total radium element Mg. hour dosage of 480.

5/5/20, 90 Mgs. of radium screened with silver .5 mm. steel .3 mm. brass 1 mm. rubber 2 mm. and gauze 12 mm. were placed in the fornices and allowed to remain there for 24 hours making a total radium element mg. hour dosage of 2160.

5/13/20, 50 mgs. of radium screened with silver .5 mm. brass 1 mm. rubber 2mm. were introduced into the cervix, and allowed to remain there for 24 hours, making a total radium element mg. hour dosage of 1200.

5/13/20, four needles containing 10 mgs. of radium each, and screened with steel .3 mm. brass 1 mm. and rubber 4 mm. were placed high in the vaginal vault, packed there tightly, and allowed to remain there 24 hours, making a total radium element mg. hour dosage of 960.

5/14/20, 50 mgs. of radium screened with silver .5 mm. brass 1 mm. and rubber 2 mm. were introduced into the upper cervix, and allowed to remain there for 8 hours making a total radium element mg. hour dosage of 400.

Grand total radium mg. hours, 6350.

History subsequent to radium treatment. 4/23/24/25/26, 1920. Patient felt weak, and experienced sensation of heat in pelvis, and twitching of muscles of hips and thighs, frequency or urination, and some irritability of the rectum. The weakness lasted for several days. 5/5/6/7/8, 1920, patient experienced more or less general weakness and some twitching, but was up and about on the fourth day after the third treatment. 5/13/14/15, 1920, patient experienced more or less general weakness, but went home from the hospital in an automobile on the 15th. Having arrived at home she retired and remained in bed during the 16th, 17th and 18th.

DISCUSSION.

This patient's general condition was such as to make her a good surgical risk were it not for her age, and her tendency to corpulency. Up to a few years ago, the extent of carcinoma from which she suffered would have been considered clearly operable by the majority of competent surgeons; the patient would have been subjected to the hazard and suffering incident to an operation, and recurrence would probably have taken place after a period of from 6 to 12 months. During the last two years, a few leading gynecologists and surgeons who have been using radium extensively for a number of years, have discontinued operative procedures in practically all cases of carcinoma of the cervix on the theory that radium promises more cures with less hazard and suffering than do operations; that it prolongs life, controls hemorrhages, and minimizes odor to a greater extent than does surgery, or thermic or drug cauterization in the cases that can not be cured. These men have had sufficient experience with the radium treatmen of carcinoma of the cervix to prompt them to continue it to the exclusion of surgery in their own practice, but they believe that they have not as yet treated a sufficient number of cases to justify them in advising its general adoption. One of the most competent gynecologists and radium therapists in the country, who has been operating with a comparatively small amount of radium, recently prophesied to one of us that surgical treatment of carcinoma of the cervix would be entirely discontinued by all of the better gynecologists and surgeons within two or three years.

The patient under discussion was given a fairly large initial dose of radium and, had she been radio-sensitive, would have had a much more pronounced constitutional reaction. Owing to the small amount of carcinomatous tissue to be absorbed, we were not afraid of proteid intoxication. She proved however, to be an excellent subject for radium therapy, and more frequent dosage was advised. This was refused by the patient under the belief that it was unnecessary, and the family absolutely forbade us to advise her of the fact that she was the subject of cancer. These cases require a minimum dosage of 5000 radium mg. hours. A better technique would probably have been the application of 50 mgs., from 10 to 12 hours every second day until a total of approximately 6000 mg., hours had been attained.

The pain and metrorrhagia promptly ceased. The cervix gradually sloughed away until it practically disappeared. Molds of fibrous tissue were lifted out of the cervix from time to time. The induration of the left broad ligament was not palpable after the 40th day following original treatment, and the patient has prospered in every way during the last 3½ months.

Examination, 9/1/20, developed greatly contracted vaginal canal, obliteration of fornices, a very small freely movable uterus, and absolutely no sensitiveness in either broad ligaments or along the course of the sacro uterine ligaments. Of course we do not know whether or not all carcinomatous tissue has been destroyed, but we believe that radium has done as much for the patient as a radical Wertheim could possibly have done. However, we do know that the benefit which accrued was unaccompanied by either danger or serious inconvenience.

CASE No. 6. Mrs. R. Age 40.

Past history: No exanthemata. Appetite, sleep and stools normal. First period at 16, regular 30 day type lowed for three days; flow accompanied by severe pain.

Married, age 20, never pregnant. No previous adult diseases or operations.

Present history: July, 1919, menorrhagia lasting one week at first, and later two weeks. 4/1/20 diagnosis of primary carcinoma of cervix. 4/23/20 vaginal hysterectomy by a competent surgeon. 5/15 to 7/7, 1920, six X-ray exposures over abdomen and sacrum by competent Radio-therapist possessing most modern equipment. Patient referred for radium treatment with the hope that the combined efforts of surgery X-ray and radium therapy might effect a permanent cure.

Physical examination: 6/15/20 all findings negative, except an induration at vaginal vault which may be part of healing process following operation performed 2 months previously, or a manifestation of recurrent carcinoma.

Treatment: 6/17/20, after evacuating rectum and providing for frequent emptying of bladder 90 mgs. radium element screened with silver .5 mm. brass 1 mm. and gauze 8 mm. were introduced into the vaginal vault, tamponed in said position tightly with moist gauze, and allowed to remain there 7 hours. Total radium mg. hours 630.

6/22/20, 90 mgs. radium element screened as above described were introduced into the vaginal vault, tamponed in said position tightly, and allowed to remain there 8 hours. Total radium mg. hours, 720.

6/23/20. 90 mgs. radium element screened as above were introduced into the vaginal vault, tamponed in said position tightly and allowed to remain there 13 hours. Total radium mg. hours, 1170.

6/24/20, 90 mgs. radium element screened as above described were introduced into the vaginal vault, tamponed in said position tightly, and allowed to remain there 14½ hours. Total radium mg. hours, 1305.

Grand total radium element mg. hours, 3825.

DISCUSSION.

This case is presented to illustrate that radium has been employed by some of the more experienced workers, in an attempt to destroy any carcinomatous cells liberated during an operation with the hope of insuring a cure when possible and postponing the advent of a recurrence and minimizing suffering when it fails to bring about a cure.

This case also illustrates that some people can tolerate large doses of radium during a comparatively short period of time, particularly if there be only a small amount of tissue to be broken down, absorbed, and eliminated.

This patient's general nutrition has materially improved. Notwithstanding the fact that she was exposed to nearly 4000 mg. hours of radium in ten days, she gained 12 lbs. within two months of the first treatment.

Case No. 7. Mrs. H. Age 74.

Past history: Mother died from apoplexy at 66. Father died from typhoid at 66. First period at 14, regular at 28 day intervals. Flowed for 7 days. Has had seven children, all born normally. Went through her menopause from her 45th to 50th years. Menopause was characterized by so-called flashes of greater or less severity for a period of ten years. Erysipelas at 24.

Present history: April 19, 1918, observed some pain in the breast which became more sensitive as time went on. A distinct tumefaction was observable, March, 1919.

Physical examination: 2/20/20. Patient obese; weighing 220 lbs. A distinct tumefaction was palpable in the upper, inner, quadrant of the left breast. There was no palpable enlargement of any of the regional lymph glands. An X-ray examination of the chest was negative, so far as indicating possible mediastinal metastasis. Blood, urine and Wasserman were negative. S. B. P. 140. D. B. P. 90. Physical exertion was accompanied by a subjective consciousness of shortness of breath, and the objective symptom of dysponea. It was decided that the tumor was probably scirrhus carcinoma, and that owing to age, obesity and general condition of the patient such operative proceedures as might be undertaken should be performed under a local anaesthetic, accompanied by the administration of a few drops of ether during axillary and clavicular dissection.

Surgical treatment: 3/5/20. The left breast and pectoral fascia were removed. No gross enlargement of the axillary or clavicular glands was found, and sections thereof were histologically normal.

Radium treatment: Inasmuch as the tumor was so located that part of its site ordinarily drained into the mediastinal lymphatic glands, 50 mgs. of radium screened with silver .5 mm. and sufficient rubber tubing to make a total of 8 mm. wall thickness was placed in a rubber tube on the ribs immediately over the normal site of these glands. The wound was closed in the usual way, and the end of the tubing containing the radium, brought out through a stab on a line with the posterior axillary fold. The radium was allowed to remain in the original position for 6 hours, and then withdrawn at the rate of 5 cm. every three hours.

Post operative and primary irradiation history: Notwithstanding the patient's age, and general condition, she experienced absolutely no primary constitutional reaction to the radium, nor did she to the massive doses of radium to which she was later exposed. The patient made an uneventful recovery, so far as the operation, and primary irradiation were concerned, with the exception that she developed a rather acute local skin reaction to the radium, at the end of the second week. Theskin underwent some necrosis, and broke down at the site of the union in three different places where the radium had been in closes contact therewith. This breaking down was attended by a considerable discharge of serum and fat globules, but the wound was finally and completely healed 6 weeks after the operation. The supposedly scirrhus tumor proved to be a medularry glandular carcinoma, and palpable secondary tumefactions appeared above, and internal to, the primary lesion within 7 weeks from the date of the operation.

Additional radium treatment: 4/24/20, 575 mgs. of radium element screened with brass 2½ mm. rubber 3 mm. and felt 150 mm. were placed over the nodes, and allowed to remain there for four hours, making a total of 23000 radium element hours.

4/25/20, 400 mgs. radium element, screened with brass 2½ mm., rubber 3 mm., felt 150 mm., were again placed over the nodes and allowed to remain there four hours making a total of 1600 radium element hours. Notwithstanding the general condition of the patient, as described above, there was absolutely no primary general reaction following this total dosage of 3900 mg. hours administered inside of 24 hours, and the patient walked to and from the office to her home which was a distance of 8 blocks. The nodes had almost completely disappeared within 6 weeks of the last radium treatment, and the patient has since prospered physically in every way. We however fear that carcinoma may become active again and that new tumors will appear. She took Sodium Bicarbonate in doses of 4.00, every second day for six weeks following the last treatment with radium.

DISCUSSION.

This case is illustrative of cases where radium may be used as an adjunct to surgery; it is even possible that large amounts of radium or efficient Roentgen Ray therapy should entirely displace surgery in similar cases. Certain it is that the new tumors developed much faster than did the original. It is possible that the initial small dose of radium served to promote a more rapid development of the cancer cells left. There are many cases on record where X-ray, or radium, or both combined, have prevented malignant lesions of the breast from undergoing neorosis for from 3 to 5 years after diagnosis. In these cases the patients dies from carcinomatosis without experiencing the alarm of local hemorrhages and the presence of infection and maladorous discharges which are so frequent, and so distressing to the patients themselves, there relatives, and all concerned with the care of these lesions.

Our experience in this case impresses upon us the unusual capacity of the skin to absorb radium. This power of the skin is due to its conparatively greater density which endangers its becoming the site of a radium burn, unless absolutely all of the beta rays are screened out. In the next similar case we shall introduce skin sutures, turn the skin flaps back and protect them and the underlying skin, with lead 2 mm. thick, and rubber 4 mm. thick, placed on either side of the lead, and expose the underlying tissues to a shower of hard X-rays and to 500 mgs. of radium from which the alpha and beta rays have been filtered out. This application placed 8 inches from the chest wall will be allowed to remain there for from 12 to 24 hours according to the patient's tolerance. This will be done in the hope of reaching all the cancer cells about the wound as well as those in the indissectable lymphatic glands, after which the previously introduced sutures will be ligated.

This case shows that some people regardless of advanced age, and poor physical condition tolerate large doses of radium; whereas the comparatively young, and perfectly healthy in every way, except for the condition requiring radium therapy may be so radio sensitive, or become so intoxicated as a result of the effect of radium on neoplasms, that they develope violent constitutional reactions which not infrequently terminate life.

The subject of this discussion will probably succumb to carcicoma, but we feel morally certain that by the judicious use of radium, supplemented by efficient X-ray treatment, if made necessary by the appearance of carcinoma over a large area, we shall be able to prevent local necrosis, and in a measure control pain.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

DIPHTHERIA IN A 19-DAY OLD INFANT.

REPORTED BEFORE THE MILWAUKEE COUNTY MEDICAL SOCIETY BY A. L. KASTNER, M. D., MILWAUKEE.

The following case is being reported on account of the unusual age of the patient and also to again draw attention to the diagnostic importance of certain characteristics often encountered in the nasal discharge, especially in infancy and early childhood.

W. J. B. Visited at home Nov. 8, 1920. Male, 19 days old. Full term—normal delivery. Breast fed. Present weight 6 lbs. 7 ozs. Negative family and previous history. Has been under the obstetrician's observation up to previous day when he suggested my seeing the baby on account of a nasal discharge, which had persisted for five days and was not responding to ordinary treatment. The voice had been hoarse for four days which was attributed to excessive crying. Baby apparently well otherwise.

The physical examination revealed a well developed and nourished infant with negative findings excepting a scant, dirty brown discharge leaving the right nostril. The rectal temp. was 99.5 F.

A nose and throat culture was made at once.

On the day following, the Milwaukee Health Department Laboratory reported the nasal culture positive for Klebs-Loeffler Bac. The infant, whose general condition had remained good, rectal temp. 99.8 F. with no other remarkable symptoms excepting the persistent nasal discharge, was given 10,000 units diphtheria anti-toxin deep into the buttocks.

The little patient having been born in the home, a duplex flat, and never having been outside of it a careful list of all visitors since the baby's arrival was made. This brought out the suggestive information that a trained nurse, rooming with the family upstairs, had been in charge of an intubated diphtheria patient in the daytime but had come back to her room to spend the night. The nurse

had been one of the few visitors who had access to our patient and had seen him but once. Nose and throat cultures were taken from all individuals living in the flat, i. e., the mother, sister, grandmother, grandfather and an aunt of the baby and from all living upstairs, a husband, wife and child and two roomers, one of the latter being the nurse referred to. All these cultures proved negative.

Circumstances over which I had no control prevented any more persistent attempts to determine the suspected carrier.

On Nov. 11, the day following the anti-toxin, the temperature was 102 F.—pulse 183, there was little nasal discharge, the throat negative, the heart beats strong and the general condition good.

By Nov. 12, the temp. was normal, the appetite good and a gain in body weight of 3 ozs. in five days was noted. At this time the mother, sister and aunt of the baby were given immunizing doses of 1,000 units of diphtheria anti-toxin.

On Nov. 14, the child seemed entirely well, weighed 6 lbs. 13 ozs., having gained 1 oz. every day, but still gave positive nose and throat cultures.

Cultures taken on Nov. 21 and 24 proved negative. By this time the baby was 5 weeks old and weighed 7 lbs. 9 ozs., having gained 1 lb. 2 ozs. since I first saw him 16 days previously. He had of course been breast fed throughout his illness.

When on Dec. 2, release contact cultures were taken from the other members of the family, the mother, sister and aunt, though all in apparent good health, gave positive throat cultures. Negative nose and throat cultures were obtained from all members of the family in somewhat less than two weeks afterward and quarantine was raised.

The natural immunity of new borns to diphtheria is well known, only 7% of them giving a positive Schick test. Diphtheria is in fact a rare disease before the first six months. C. G. Kerley, for instance, states that his youngest diphtheria patient was five months old, but that in a colleague's practice there occurred a case in a six weeks old infant. After the sixth month, however, the susceptibility increases in leaps and bounds so that positive Schick reactions during the first year are stated at 43%. This figure is well borne out by clinical experience especially in wards for infants where the occurrence of nasal diphtheria is exceedingly common in babies over six months of age.

A nasal diphtheria, especially if the infection is limited to the anterior portion of the nasal passages may run an exceedingly mild course as far as constitutional symptoms are concerned, yet such a case is a grave menace because in itself not pronounced enough to draw the attention of the careless or inexperienced observer it may become the "fons et origo" of a serious epidemic.

Not wishing at this time to discuss at length the advisibility of a routine Schick test and the administration of diphtheria toxin—anti-toxin to all susceptibles, I desire only to mention it as a procedure that should engage our serious consideration and as one especially full of promise in institutional practice.

Under conditions as we find them in private practice, where the determination of susceptibility to diphtheria by the Schick test is practically unknown let alone active immunization by toxin—anti-toxin, the early *clinical* recognition of diphtheria, especially nasal diphtheria becomes naturally of prime importance.

A nasal diphtheria most often betrays itself by a persistent, dirty brown or bloody, excoriating discharge coming from one or both nostrils. If a discharge is remarkable for nothing besides its persistency no matter if coming from one or both nostrils a culture should be taken. If a discharge is persistent and leaves only by one nostril it is more suspicious. If the discharge is persistent, leaves only by one nostril and is bloody besides, the diagnosis usually centers down to either a foreign body in the nose or diphtheria.

If the discharge is dirty brown or bloody, persistent, comes from but one nostril and has excoriated the upper lip it is usually a foregone conclusion that we are dealing with a nasal diphtheria. Such a discharge should never go unchallenged. It demands an immediate explanation. Personally, when encountering such a picture I strongly advise the immediate administration of anti-toxin not waiting for a culture to confirm the diagnosis.

ECONOMIC IMPORTANCE OF PREVENTING COMMUNICABLE DISEASES.

BY L. W. HUTCHCROFT.

READ BEFORE HEALTH INSTITUTE, MINERAL POINT.

If some reliable person were to appear before you tonight and show that the farmers of Wisconsin are suffering losses each year amounting to $30,000,-

000 as a result of black leg, hog cholera, chintz bugs, or oat smut, or if he were to tell you of other preventable losses, with the exception of the loss in human life and suffering, there would be an immediate demand for a legislative investigation and the necesary machinery would be put in motion to reduce the loss to a minimum or eliminate it entirely.

At every session of the legislature the bee keepers ask for further legislation to better protect them from losses and to investigate bee sickness. The fruit growers of California have asked Congress for assistance in devising ways and means to protect the fruit crop from freezing. In a word the federal, state and often the local governments are constantly called upon to assist in promoting industrial enterprises. It is altogether proper that this should be done. I am heartily in favor of the government undertaking any work which it can do better than individuals.

The protection of the public health is peculiarly a matter which must of necessity be undertaken by the public. In all countries where any degree of progress has been made in preventing sickness and death governmental agencies are responsible for the results obtained. Wherever little interest is taken by the government in questions of public health, the general death rate is high and the mortality and morbidity from infectious and contagious diseases is very great.

I am going to demonstrate to you that it is more important to the people of Wisconsin to provide an efficient state department of health and competent local boards of health than it is to regulate the public utilities, pass legislation for the control of the state banks and insurance companies, to revise the nomination and election systems or to do any of the other many things which are being agitated and which are receiving the serious and thoughtful consideration of our legislators and the people in general.

Property rights are safeguarded in every possible way, not because of the property, but on account of its use in serving the needs of man. It, therefore, must be evident to any one who will thoughtfully consider the question that the center about which our whole social fabric is constructed is the individual. An adequate supply of healthy human beings is necessary in order to make valuable and properly utilize the wealth of your city, the state or the country.

It has been said that human life is the cheapest commodity in the world for the reason that it is of no value to any one except the possessor. This is true from the point of view of the individual, but there is a public value to life which, I believe, has been lost sight of in our mad efforts to acquire wealth and social position.

There are four great preventable wastes which should and will be largely eliminated. The first is preventable illness; the second preventable death; the third preventable conditions of low physical and mental efficiency; and the fourth preventable ignorance.

Preventable illness will be abolished when people generally appreciate the casual relation between their mode of living and the diseases with which they are afflicted. Very little will be accomplished by pointing out to a person afflicted with tuberculosis the methods by which the disease was contracted. The causes producing typhoid fever will not be eliminated by informing all those who have the disease that it is usually contracted from an infected water or milk supply, or from contact with a person who has the disease. The people who still have their health and strength should be acquainted with the methods by which the various communicable diseases are contracted and also taught at an early age, if possible, correct principles of right living. This involves an extensive educational campaign and the expenditure of considerable sums of money.

Fortunately, we have passed the experimental stages in public health administration, and it has been demonstrated in practically every civilized country what must be done in order to keep people healthy and prevent the enormous loss each year from the various communicable diseases, in addition to the sickness and deaths which are directly traceable to improper living.

Preventable conditions or low physical and mental efficiency go hand in hand with preventable illness and death. It requires no argument to prove that the physical and mental condition of an individual is largely dependent upon environment. Unless the environment is conducive to health, the resisting powers will be gradually diminished and the individual will eventually succumb to illness and premature death. The only known remedy is education.

Contrary to common impression, there is no iron law of mortality. The fatalistic belief, which

was formerly accepted, that it is the "will of God" for many of us to die in infancy, others to depart this life in early manhood and womanhood, and others to live to a ripe old age is responsible, in a large measure, to the indifference displayed on every hand to health problems.

Statistics show that the average duration of life in India is less than twenty-five years. It is not a matter of chance that the average duration of life in Sweden is over fifty years. The difference between the average number of years which people live in India as compared with Sweden represents almost entirely differences in the practical application of the principles of sanitation and public hygiene. The length of life is increased wherever sanitary science and preventive medicine are applied. In India it is stationary. In Europe it has doubled in three and one-half centuries. The rate of increase during the seventeenth and eighteenth centuries, when little was known on the subject of preventive medicine, was about four years per century. During the first of the nineteenth century, the rate of increase was nine years per century. During the latter half of the nineteenth century the rate was seventeen years per century. In Germany, where medical and sanitary science has reached its highest development, the rate of increase in the duration of life is twenty-seven years per century. Unfortunately we have no comparative statistics on this subject in the United States, with the exception of Massachusetts, where life is lengthening at the rate of about fourteen years per century, or one-half the rate in Germany. There is no need, however, of waiting a century for this increase. It is not necessary for the United States to have the highest death rate from typhoid fever in the civilized world. Neither is it necessary that we should have periodic epidemics of scarlet fever, diphtheria, measles, whooping cough, etc.

Again it is not necessary that fond parents should continue to believe that it is better for their children to have these diseases while young on the assumption that they will contract them sooner or later. One of the most eminent scientists the world has produced is authority for the statement that it is impossible for man to eliminate all germ diseases. If this can be accomplished in Wisconsin, it would result in the saving of more than 9,000 valuable lives each year. The average age at death would be increased from 40.5 years to 46.9 or a gain of more than 6 years in the life of our citizens. Consider, if you please, the great possibilities of adding six years onto the lives of our people. It is quite possible that in a few cases this would be too much and it would result in harm rather than good. You all have in mind, however, scores of individuals who would have accomplished a great deal for their friends and families, if they had been permitted to live and enjoy good health.

Three-fourths of the tuberculosis from which 150,000 Americans die annually could be avoided. From a careful study of the ratio of preventability of ninety different causes of death it is found that at least fifteen years could be added at once to the average human life by applying the science of disease prevention. More than half of this additional life would come from the prevention of tuberculosis, typhoid fever, and five other diseases the prevention of which could be accomplished by pure air, pure water and pure milk. For example, in one of our large cities the death rate from typhoid fever was reduced 80% after the installation of a pure public water supply. In addition to this for every death saved from typhoid fever two or more deaths are saved from other diseases.

There has been no time in the history of the world when human life was as valuable as it is at the present. There are two reasons for this. First, owing to the very marked decline in the birth rate it is impossible to produce an adequate supply; secondly, the efficiency of the individual, due to the increased use of machinery, is much greater than ever before. It, therefore, should be a serious matter of public concern to conserve the lives which we now have and to eliminate all disease producing factors as much as possible.

More than 30% of the total deaths in Wisconsin each year are from easily preventable causes. It is the first duty of the state to lend all possible assistance, and public health, upon which our hap-
eliminate all diseases which are within the power of man to remove or destroy. An enemy as unyielding as disease cannot be successfully combated without the assistance of the state. Public education would fail without the support from the state, public morals would not exist without the same assistance and public health, upon which our happiness and prosperity depends, must have similar support. The problem of the conservation of our natural resources is, therefore, not a series of independent problems, but a coherent, all embracing proposition. If our nation cares to make any provision for its grandchildren and its grandchildren's

grandchildren, this provision must include conservation in all its branches—but above all, the conservation of the racial stock itself.

The average annual death rate for the entire registration area which now comprises 53.3 per cent of the total population of the United States, is 15 per thousand. The rate in Wisconsin for 1910 was 12.1 per thousand. This represents an annual saving of 7,000 lives in Wisconsin as compared with the death rate for the country as a whole, but in spite of this wonderful saving in human life, 30% of the total deaths each year in Wisconsin, or approximately 9,000 deaths result from causes easily preventable. During 1910, 2,396 deaths from tuberculosis were reported. All of this great loss of life could have been prevented and will be prevented in the near future, if the state of Wisconsin does not shirk her responsibility in combating this disease.

Statistics published by the German government show that if tuberculosis decreases at the present rate, there will be no tuberculosis in the German Empire after thirty years. English government statistics show that at the present rate of decrease there will be no tuberculosis in England after forty years. Massachusetts, long recognized as a most progressive state in public health work, has reduced her tuberculosis death rate 63% in the last fifty years. New York reduced her tuberculosis death rate during the seven years from 1900 to 1907, 8%; since that time a more vigorous campaign has been made with the result that in the last two years, the death rate from this disease was decreased 8.5 per cent, making a total decrease in nine years of 16.5 per cent.

The following interesting table shows the cost of tuberculosis for the last two years:

Total deaths	5,099
Single males and females	2,444
Married males and females	2,295
Widowed	360
Homes deprived of a father or mother	2,295
Homes with no parents (children orphans)	360
Orphans	1,440
2,396 lives valued according to the American table at $1,700 each	$4,073,200
Cost of nursing, estimated at $60 per case	143,760
Cost of drugs and other medicines; $40 per case	95,840
Doctors' bills, etc.; $50 per case	119,800
Total	$4,432,600

The following table shows the annual cost in human life from the various infectious and contagious diseases, all of which are easily preventable:

2,396 deaths from tuberculosis at $1,700 each	$ 4,073,200
2,453 deaths from pneumonia at $1,700 each	4,170,100
1,319 deaths from diarrhea and enteritis at $1,700 each	2,242,300
540 deaths from typhoid fever at $1,700 each	918,000
493 deaths from meningitis at $1,700 each	838,100
369 deaths from diphtheria at $1,700 each	627,300
293 deaths from scarlet fever at $1,700 each	498,100
168 deaths from influenza at $1,700 each	285,600
150 deaths from whooping-cough at $1,700 each	255,000
98 deaths from puerperal septicemia at $1,700 each	166,600
94 deaths from measles at $1,700 each	159,800
Total	$14,234,100

Considering the infant population in its capacity to live after birth, it is shown that approximately 5,000 of the living births each year, or nearly 10 per cent of the total, die before reaching the age of one year. The important diseases responsible for the deaths under one year of age given in the order of the actual number reported, are as follows: Infantile diarrhea, premature birth, pneumonia, convulsions, congenital debility, acute bronchitis, meningitis, whooping cough, and syphilis.

By a reasonable application of existing knowledge, scientific experts estimate that 47 per cent of the deaths during the first year of life can be prevented. If the maximum rate of preventability could be attained it would result in the annual saving of 2,500 lives of children under one year of age. With a better knowledge of the care of infants, the deaths from diarrhea and convulsions, much of which is of gastro-intestinal origin, would be practically eliminated. Since these two causes of death constitute 61 per cent of the total deaths among children under one year of age, the saving in human life would be considerable.

In addition to the actual loss of 9,000 lives per year, or 31.5 per cent of the total deaths, due to preventable diseases, the loss of earning power due to sickness, the expense of quarantine for the various quarantinable diseases, and the cost of treatment and nursing, are important items of expense. Considering typhoid fever, small pox, measles, scarlet fever, whooping cough, diphtheria, croup, influenza, dysentery, diarrhea, and puerperal septi-

cemia as the diseases most easily prevented it is found that by estimating the number of cases based upon the actual number of deaths reported, with a given mortality rate for each disease we have in Wisconsin, each year, 4,600 cases of typhoid fever, 2,000 cases of small pox, 2,100 cases of measles, 1,450 cases of scarlet fever, 1,700 cases of whooping cough, 5,700 cases of diphtheria, 900 cases of croup, 2,200 cases of influenza, 300 cases of dysentery, 1,400 cases of erysipelas, 1,460 cases of general septicemia, 12,000 cases of tuberculosis, 1,400 cases of meningitis, 11,800 cases of pneumonia, 8,800 cases of diarrhea, and 970 cases of puerperal septicemia.

This gives a grand total of 71,080 cases of preventable illness where the average duration of the disease varies from fourteen days for measles and influenza to one year for tuberculosis. The loss of time by the individual or those who must care for him, if the patient is a child with no earning capacity, when valued at the rate of $1.50 per day results in an annual loss in the earning power of our people of $15,824,000. This is in addition to the cost of treatment which cannot be properly estimated from the data available.

With an annual economic loss of $15,800,000 each year from preventable illness and $14,200,000 each year from preventable deaths, it is easily demonstrated that the annual economic loss from the socalled preventable diseases in Wisconsin exceeds $30,000,000 per year. I am confident that this is a conservative estimate and does not take into account the misery and suffering incident to the prolonged sickness or death of the bread winners.

Preventable disease is one of the chief causes of poverty and should be entirely elimiated as an element in producing this undesirable condition. If every case of typhoid fever could be properly taken care of, the disease would entirely disappear from our state in a few months. All excreta from the patient should be thoroughly disinfected before it is finally disposed of and this would prevent any possible pollution of the water, milk or food supplies by the typhoid germs. It also would eliminate the dangers of contracting this disease through the element of flies.

Diarrheal diseases, which are so fatal to young children, are easily avoided. Eradication of this disease is dependent upon proper care and feeding of young children and a pure water and milk supply. (In connection treat of the necessity for establishing a pure water supply and adequate sewage disposal.)

There is less danger of contracting typhoid fever or other diarrheal diseases in the well governed cities of 20,000 and upwards than in any other place in the state. The second safest place to live, so far as the dangers of contracting these diseases are concerned, is in the rural communities. The most dangerous place of all is the small city and village with no public water supply and no adequate system of sewerage disposal. In most of these places the water supply is obtained from private wells, and cesspools are permitted which soon contaminate the ground water.

Small pox, scarlet fever, diphtheria, meningitis, infantile paralysis and other quarantinable diseases are more difficult to control, for the reason that the mode of infection is not well understood. However, if the first case of smallpox, scarlet fever or diphtheria in a locality is promptly diagnosed and the case reported to the local health officer, as the law requires, epidemics of these diseases would be unknown in our state.

The health officers must know of the presence of the disease before proper quarantine restrictions can be established, and unless quarantine is properly enforced, there is always a grave danger of general infection and severe epidemics. There is no case of any quarantinable disease in a locality which is so important as the first case. (Speak in this connection of the desire of parents to avoid quarantine and the influences brought to bear upon the attending physician to make an improper diagnosis. Also mention the case of health officers who refuse to advise the public of the facts regarding an outbreak of dangerous communicable diseases for fear that it will hurt business).

It is unnecessary in this discussion to dwell upon the methods for the prevention and control of tuberculosis. The people generally are becoming educated as to the dangers of this disease and the methods for its prevention. The increased interest taken in public health problems by employment of visiting nurses, medical inspection of schools, open air sleeping, etc., are all evidence of general interest in the prevention of tuberculosis as well as the other dangerous communicable diseases. Fortunately, the solution of the tuberculosis problem furnishes the key for the solution of many other public health problems and for this reason there

is no occasion for the statement which we often hear, that people are being educated to the dangers of tuberculosis at the expense of knowledge relative to the prevention of the other dangerous contagious diseases.

The first requisite in efficient public health administration is an active, conscientious health officer. The citizens of every township, incorporated village and city in the state can make no more profitable investment than to employ a competent physician or trained sanitarian to supervise the health of the community. The health officer who is paid ten dollars per year for his services, as is done in many localities, should not be condemned if he neglects or refuses to render more than ten dollars worth of service. In public health work, as in other lines, we get what we pay for, and it is not economy or good business to neglect our most valuable asset, the health and general welfare of the individual citizen.

Dr. Ferro, the great Italian historian, in writing of the Americanizing of Europe, states that under modern conditions the complexity of life makes it impossible to attain any degree of perfection in any activity. He states that one cannot have and should not desire to have everything in this world. We are more concerned with the speed of our trains, automobiles, aeroplanes, telegraphs and telephones, stocks and bonds and modern industrial life in general, than in music, painting, sculpture or simple perfection in any line.

I believe that we can draw a valuable lesson from this in connection with public health work. We have been too busy with other things to be interested or concerned about our most valuable possession. When we have it we do not retain it, and, unfortunately, if the health of the individual has been destroyed, it can never be regained.

In every community there are four different mental attitudes in regard to health. They are the indifferent, the fatalistic, the enthusiastic and the rational or scientific. Fortunately, the indifferent and fatalistic types of mind are rapidly passing to extinction.

Those who are indifferent to the subject of health are people who do not appreciate the possibilities of prevention and who have no adequate conception of cause and effect in safeguarding health or in producing disease.

The fatalist is one who believes that the span of life is fixed by an immutable law, and hence the observation of known rules and regulations for the prevention and control of disease are of no avail. These are people who believe that preventable sickness and death is the "will of God." Both classes are present in every community in large numbers and are very destructive to advanced public health administration.

The enthusiastic type is best characterized as visionary. They have wonderful schemes for cleaning up a locality within a day, but usually do not accomplish results for the reason that they do not take into account human nature as it exists, and they are easily discouraged.

The rational or scientific type of person is one who realizes that the welfare of the individual is dependent upon and made a part of the welfare of all. These are the people who do not judge the worth of the health officer by the salary he receives, the number of speeches made, letters written, or literature distributed.

The conservation of human lives is becoming a great social question, one in which society is taking over responsibilities and functions left heretofore in the hands of the individual.

Previous to our present knowledge regarding the transmission of contagious diseases, sickness was largely a personal matter between the patient, the family and the physician. In cases in which the fact but not the manner of contagion was known, local health officials could quarantine the patient and prevent others from coming into contact with him. Until thirty-five years ago, however, no one knew exactly what caused the various contagious diseases or how this cause was transmitted from one individual to another.

Today we know that yellow fever and malaria are transmitted by the mosquito, bubonic plague by the rat and the flea, hookworm disease through infected soil, typhoid fever through contaminated water or milk, or by flies or personal contact; tuberculosis, diphtheria and other contagious diseases through the discharges of patients.

Disease is no longer a matter which concerns the individual alone. All the conditions of life and of living enter into the causation or suppression of disease. Many of these factors are beyond the control of the individual. They can be controlled only by society, acting in an orderly and effective manner, that is, by the state. As a result, most of the measures for the public health of recent years have been more largely social and economic than

medical. School inspection, tenement-house inspection and reform, improved conditions in workshops, stores and factories, efforts to secure pure food, pure water and pure milk for the community, free parks and playgrounds, municipal baths,—all these, although not medical in the old sense of the word, are primarily for the health of the individual and of the community.

The most important factor increasing human happiness and human efficiency is the work for the improvement of public health which is daily becoming more scientific and practical. As an example of the value of sanitation and its application to great projects, we may cite the work being done in the Canal Zone at Panama. The sanitary administration has made it possible to carry on this work under conditions as favorable to life and health as can be found in any state of the union.

The neglect to properly safeguard the health of the laborers made the French attempt to dig the canal a failure. Under the French regime with an average force of more than 10,200 men, they lost in nine years 22,189 men; we ourselves with an average force of 33,000 men in nearly the same length of time have lost less than 4,000 men. The annual death rate among the French employees was slightly in excess of 240 per thousand. Our maximum rate in the early days was 40 per thousand, while the rate at the present is 7.5 per thousand. Out of each one thousand men employed by the French company 821 were taken sick in the course of the year with malaria. We have reduced the rate to 187 per thousand employees at the present time. There has not been a case of yellow fever since 1906.

Dr. Wm. C. Jorgas, chief sanitary officer for the Canal Zone, states that the expense for sanitation on the Isthmus amounts to about $365,000 per year. Considering the marvelous results accomplished this is not an excessive sum to spend for the sanitary and hygienic administration of the Zone. The work that is being done will serve as a valuable object lesson to the health authorities all over the United States.

I have pointed out the tremendous economic loss from preventable diseases in Wisconsin and perhaps you have concluded that Wisconsin must be one of the worst states in the Union in this regard. Such is not the case. If the general death rate in Wisconsin were as high as that for the country as a whole, approximately 8,000 more people would die each year than under the present conditions. The death rate for the entire registration area, including Wisconsin, is 15.8 per thousand, while the rate in Wisconsin is only 12 per thousand. Comparing conditions today with the situation even ten years ago, we find that great advances have been made.

I have mentioned before in this paper health conditions in Sweden. In this country as a result of the practical application of the principles of sanitation and hygiene, the duration of life is longest and the mortality least. There alone can it be said that the chances of life have been improved for all ages. Infancy, middle age and old age, each show a lower mortality in Sweden than in any other country.

In the United States and also in Wisconsin while we can boast of some reduction in infant mortality, the mortality after middle age is steadily growing worse and the potential vitality of the people is, in all probability, deteriorating. The reason why Sweden has succeeded in improving the vitality of middle age and old age is due to the fact that these people see the problem of personal hygiene as a whole. The public health is made up of the health of individuals and until we fully appreciate this satisfactory advancement cannot be made.

We regard public health very largely as a matter of protection against germs. While this protection is effective in defending us from epidemics of acute diseases, it is almost powerless to prevent the chronic diseases of middle age and later life. Bright's disease, heart disease, nervous breakdowns, etc., are due, primarily, to unhygienic personal habits. Medical inspection and instruction in schools has aided greatly in the muscular development of the citizens of Sweden.

Sweden's hard bread has preserved their teeth and the Gothenberg system of licensing the sale of strong drinks is gradually weaning them from alcohol. Sweden has not hesitated to attack the problem of personal habits. The personal liberty argument which is so often advanced in opposition to sanitary progress should be eliminated. Liberty, in many cases, merely means license to do that which is detrimental to the health of the individual and often involves the health of the whole community.

The noblest task, therefore, which I can conceive

for any man is to aid in the erecting of true ideals of perfect manhood and womanhood. Our ideals, though improving, are not yet worthy to be compared with those of Japan or Sweden, and the ideals even of these countries have not yet reached the level of those of ancient Greece still imaged for us in imperishable marble. With superior knowledge, our health ideals should excel those of any other age. These ideals should not stop with the mere negation of disease, degeneracy, delinquency and dependency. They should be positive and progressive. They should include muscular development, a sound mind in a sound body, integrity of moral fiber, a sense of the splendor of the perfect human body as a temple of the human soul, a sense of the enjoyment of all life's proper functions. As William James said, simply to breathe or move our muscles should be a delight. The thoroughly healthy person is full of joy and optimism. He rejoiceth like a strong man to run a race. Said Emerson: "Give me health and a day, and I will make the pomp of emperors' ridiculous!" Our health ideals should be nothing short of an abiding sense of the sweetness and beauty, the nobility and holiness of human life.

BOOK REVIEWS

Nursing Mental Diseases. By Harriet Bailey, R. N. 175 pages. The MacMillan Company, New York. 1920.

This splendid little work appears at an opportune time when more and more interest is being shown in the scientific care and treatment of mental patients. The work is well written, covers the field, and could well be recommended for systematic study for all nurses in institutions for the care of the insane.

The Duodenal Tube and Its Possibilities. By Max Einhorn, M. D., Professor of Medicine at the New York Post-graduate Medical School; visiting physician to the Lenox Hill Hospital, New York City. Octavo of 122 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $2.50 net.

In his preface, Dr. Einhorn gives as his purposes for the lectures here printed, first, to acquaint his colleagues with the actual facts regarding the duodenal tube in a manner that they can make use of, and second, to facilitate the work of others who are willing to enter this field of investigation for further study. It has been only in the last few years that the value of the duodenal tube both in the treatment of disease and for purposes of diagnosis, has been recognized. The diagnostic possibilities are far from having been exhausted. The work is well written and well illustrated and should prove of much value in encouraging others to take up this field of research and therapeutics.

Our Nervous Friends. By Robert S. Carroll, M. D. 258 pages. The MacMillan Company, New York. 1919.

Dr. Carroll's new work, which follows his "Mastery of Nervousness" and "The Soul in Suffering" is written in semi-fiction form and portrays the life histories of certain people addicted to nervousness. It is written in popular form and is interesting and profitable reading, though one would hesitate in placing it in the hands of many for whom it is intended. This is not true of his first work which has been found very valuable for this purpose. "Our Nervous Friends" is, however, worth while and is recommended for those interested in the subject.

Diagnosis and Treatment of Brain Injuries. By Wm. Sharpe, M. D., Professor of Neurological Surgery, New York Polyclinic Medical School. 759 pages. 232 illustrations. J. B. Lippincott Co., Philadelphia and London. 1920. Cloth, $8.00.

This splendid work, beautifully published and illustrated, is a welcome addition to readers on the subject. Such advances in the last few years have been made in the diagnosis and treatment of brain injuries that a work of this character is most opportune.

The subject has been covered by presenting it in three main parts; part one, general conditions, pathology, diagnosis, treatment, and operative technique. Part two, brain injuries in adults, illustrative cases (acute and chronic). Part three, brain injuries in new born babies and children, illustrative cases (acute and chronic).

The author has presented a large number of case histories which will be found interesting and instructive. The part devoted to the brain injuries of new born babies and children will be found especially valuable to the obstetrician and pediatrician. The work is approved and recommended for any physician's library.

Medical Clinics of North America. Volume IV, No. 1 (New York number, July, 1920). By New York Internists. Octavo of 370 pages with 44 illustrations. Philadelphia and London. 1920. Issued serially, one volume every other month. Paper $12.00; cloth $16.00 net. Consisting of six numbers per clinic year.

Diseases of Women, By Chas. M. Green, A. B. M. D., Professor of Gynecology, Harvard University. Published by the W. M. Leonnard Publishing Company, Boston.

This volume is a second edition by the same author of case history reports of different conditions with which the obstetrician and gynecologist is concerned in office, hospital and consultation practice and should be of great service to senior students and younger practitioners.

This edition discusses a number of subjects not taken up in the original issue.

The diction is excellent and the paper and printing are of fairly good quality, but the writer believes that a more liberal use of cuts, particularly colored ones, would have added materially to the value of the book.

J. P. M.

Simplified Infant Feeding. By Roger H. Dennett, B. Sc., M. D. Second edition. 381 pages. 14 illustra-

tions. Philadelphia and London: J. B. Lippincott Co. 1920.

The second edition contains much of the text of the first edition, with the easily referable synopsis in the introductory chapter.

Considerable revision in the chapter on diarrhoea appears, while new chapters have been added on Acidosis, the Hypertonic Infant, Dry Milk and the Salts of Milk.

Excellent chapters are given over to Breast Feeding, Combined Breast and Bottle Feeding, and Breast Weaning.

Three-hour intervals are advocated for average infants, and four-hour for normal infants gaining very rapidly.

The use of dry milk is encouraged "as one more method to combat digestive disturbance" and where good milk is not available.—J. G. T.

THE MEANING OF REST TO PATIENTS.

One of the fundamental dicta with regard to metabolism is that it increases with work or muscular effort. How large, comparatively, the increment may be is less well appreciated. The answer to the question has an important bearing on the food requirements of the working person; there is also a significant relationship of effort to energy expenditure in the case of the sick who need to conserve or gain. The doctrine of rest, either complete or limited, is one that the physician finds desirable to inculcate often. What is gained thereby in the mere conservation of food fuel or body tissues can be well understood by a consideration of what exertion really entails. The expenditures of energy in the body is affected by a number of factors, which include age, size, sex and occupation. The loss of energy per unit of accomplishment is greater in those cases in which the worker is untrained and the muscles are unpracticed for their tasks. Fatigue also causes inefficient performance.

The activities of a recuperating or resting patient are comparable in some degree with the lightest types of housework. What this may mean in terms of energy has recently been described by Langworthy and Barott[1] of the Office of Home Economics, U. S. Department of Agriculture. Light tasks, such as sewing, crocheting or embroidering, call for an average expenditure of about nine calories an hour more than that of the same person sitting quietly in a chair. Tasks regarded as "harder work" than sewing, such as washing, sweeping or scrubbing, require an increment of at least 50 calories an hour.

The government experiments have shown how the mere change in the height of the table at which work is being done may cause an increase of from 20 to 40 per cent in the calories required. This illustrates, to quote the report, the importance of choosing equipment to "fit" the worker. If the lesson is applied to the sick room, however, it serves as a patent reminder of what is too often overlooked by both the patient and attendants, namely, that it requires only a seemingly small degree of discomfort or added effort to waste a relatively large fraction of available "strength" and energy. Conversely, complete rest represents the possibility of real conservation if the food intake and the metabolic capacity are not impaired. Even easy work —indeed, sometimes mere sitting up or the operation of dressing—means a real cost to the body which it may be well to save in times of nutritive stress, when economy of energy is an immense gain to the patient.—*Jour. A. M. A.*, Aug. 28, 1920.

[1]Langworthy, C. F., and Barott, H. G.: Energy Expenditure in Household Tasks, Am. J. Physiol. 52:400 (June), 1920.

DECLARING THE ALCOHOL PERCENTAGE.

And now comes the *American Druggist* and suggests that the National Food and Drug Act be amended so as to delete the requirement of statement of alcoholic content on the labels of drug products. According to this representative of pharmacy, to require longer a declaration of the alcohol content on medicines would be inimical to the public welfare as the statement "is an incentive to the uninformed and depraved to resort to the use of drug preparations containing alcohol, as a necessary constituent, for intoxicating purposes." If our memory serves us there were at least a few people who "resorted to the use of" Peruna and similar nostrums for "intoxicating purposes" long before the Food and Drugs Act required these products to declare their alcohol percentage. According to this same authority, alcohol in medicinal preparations "is used at present, almost exclusively, for solvent, preservative and extraction purposes, and not for therapeutic purposes." Was there ever a proprietary remedy in which the alcohol—ranging from 10 to 47 per cent—was *admittedly* a therapeutic ingredient? Another argument advanced is that processes of manufacture are trade secrets and should not be required to be divulged and as the "vehicle of a drug preparation is a part of the process of manufacture, and since the vehicle is frequently alcoholic (We'll say it is!—Ed.) a statement of alcoholic content often deprives the manufacture of one of his legitimate means of competition." But the crowning argument of all made by our esteemed contemporary is that "the deletion of the now unnecessary alcohol statement would permit the inclusion of more important information on the label." Yes, indeed! The words *"contains 25 per cent alcohol"* take up so much valuable room; space, doubtless, that the manufacturer of proprietary remedies would prefer to use in giving the public information regarding some of the other ingredients of his nostrum that the federal law does not require to be declared on the label. With the appropriations for the Bureau of Chemistry cut down to a point where it will be rendered impotent to proceed against fakes in medicine, and with the drug trade, apparently, about to insist that the teeth of the Food and Drugs Act shall be drawn, the nostrum interests must be looking forward to prosperous times.—*Jour. A. M. A.*, Aug. 28, 1920.

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Manitowoc	J. M. Kelly, Cato	E. C. Cary, Reedsville.
Marathon	R. W. Jones, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. W. Boren, Marinette	C. H. Boren, Marinette.
Milwaukee	F. C. Studley, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	S. D. Beebe, Sparta	T. J. Sheehy, Tomah.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	M. J. Sandhorn, Appleton	G. T. Hegner, Appleton.
Ozaukee	C. A. Balkwill, Grafton	W. H. Drissen, Port Washington.
Pierce	C. A. Dawson, River Falls	Rollo Cairns, River Falls.
Portage	D. S. Rice, Stevens Point	F. A. Marrs, Stevens Point.
Price-Taylor	G. H. McClure, Westboro	G. C. Wichman, Rib Lake.
Racine	F. W. Pope, Racine	Susan Jones, Racine.
Richland	R. H. Delap, Richland Center	G. Benson, Richland Center.
Rock	M. G. Spawn, Beloit	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Barahoo.
Shawano	A. J. Gates, Tigerton	W. H. Cantwell, Shawano.
Sheboygan	T. Gunther, Sheboygan	Harry Heiden, Shehoygan.
St. Croix	W. H. Banks, Hudson	O. H. Epley, New Richmond.
Trempealean-Jackson-Buffalo	E. A. MacCornack, Whitehall	C. F. Peterson, Independence.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	F. W. Aplin, Waukesha	S. B. Ackley, Oconomowoc.
Wanpaca	E. W. Jones, Weyauwega	H. A. Jefferson, Clintonville.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DODGE COUNTY

The Dodge County Medical Society held a meeting and banquet at the Hotel Grand, Juneau, Tuesday evening, August 24, which was attended by about forty members. After the banquet, a meeting was held at the city hall where slides showing the treatment of tumors by radium were shown by Milwaukee specialists. An autopsy was then performed by two physicians of the Columbia Hospital, Milwaukee, for the benefit of the medical men and a few members of the legal profession.

OZAUKEE-WASHINGTON COUNTIES.

A joint meeting of the Ozaukee and Washington County Medical Societies was held at Cedarburg, Monday, August 9. An interesting program was given by Doctors Harper, Thompson and Oleson of the State Board of Health on public health problems, which was followed by a lively discussion.

MANITOWOC COUNTY

The Manitowoc County Medical Society held a joint meeting with the staff of the Holy Family Hospital at the hospital Tuesday evening, August 3rd. Dr. Wm. G. Kemper reported an interesting case of arterio sclerosis and Dr. J. E. Meany a case of Hodgkin's disease. Doctors Harper, Thompson and Oleson of the State Board of Health spoke on health cooperation between the physician and the board of health.

ASSOCIATION NEWS

REPORT OF THE PHARMACOPOEIAL CONVENTION TO THE STATE MEDICAL SOCIETY.

The Pharmacopoeial Convention met at the New Willard Hotel, Washington, May 11th, under the presidency of Dr. W. H. Wiley. At the first meeting Dr. Wiley delivered the presidential address and other routine business was transacted.

It was generally understood between the physicians and pharmacists from the beginning that the medical representation on the committee of 50 for the revision of the Pharmacopoeia would be larger than in the case of the 1910 convention and that the medical members of the revision committee would determine the scope of the Pharmacopoeia without interference from the Pharmaceutical members. This was a great improvement over the spirit of the 1910 Convention when the medical members had little to say as to what should be included and what should be deleted from the Pharmacopoeia. It was decided at the caucus of the medical members of the convention that we would ask for eighteen medical members on the committee of fifty for the revision of the Pharmacopoeia. The following members were nominated for the revision committee: Anderson, Barbour, Barnes, Bastedo, Christian, Craig, Fussell, Edmunds, Fantus, Hamburger, Haskins, Hatcher, Hodge, Hunt, Koenig, Leonard, McCoy, Puckner, Rowntree, Simmons, Sollman, Stitt, Wood, Thornton, Kebler, Beates, Loevenhart.

The selection of the eighteen medical members who were to serve on the revision committee was finally left to a committee of the caucus and the following were chosen: Anderson, J. F., Barbour, H. G., Bastedo, W. A., Christian, H. A., Craig, A. R., Edmunds, C. W., Fantus, B., Fussell, M. H., Hamburger, L. P., Hatcher, R. A., Hodge, E. R., Kebler, L. F., Leonard, I. E., McCoy, G. W., Rowntree, L. G., Sollmann, T., Stitt, E. R., Wood, H. C. These nominees were unanimously elected by the Convention as a whole, the pharmaceutical members accepting the eighteen names proposed by the medical caucus without question. Similarly the medical members of the Convention agreed to endorse the thirty-two names proposed by the Pharmaceutical, Chemical, and Botanical members. I have not a list of the thirty-two members who were selected by the Pharmacists.

It may be pointed out that a medical man has always presided as president of the Pharmacopoeial Convention, and in accordance with this tradition, Dr. Reid Hunt, Professor of Pharmacology at Harvard Medical School was chosen president. He made a brief address.

The following vice-presidents were chosen:

First Vice-President—Powers, F. H.
Russell, M. H.
Bastedo, W. A.
Sayre.
Anderson, J. F.

The following trustees were chosen:

Simmons, G. H.
Solis-Cohen, S.
Whepley, H. M.
Beal, W.

Secretary—Kebler.
Assistant Secretary — Stockberger.
Treasurer—Hilton.

At the next meeting of the convention the following subjects were acted upon:

1. Definition of object and scope of the Pharmacopoiea.
2. Doses.
3. Nomenclature.
4. Synonyms.
5. Purity and strength of pharmaceopoieal articles.
6. International standards.
7. General formulaes.
8. Appending a list of preparations in which an official article is used.
9. Alcoholic percentages in official preparations.
10. Assay processes.
11. Serums and other biological products.
12. Weights and measures.
13. Atomic weights.
14. Physical constants.
15. Standard temperature.
16. Compound preparations.
17. Pharmacognostical descriptions.
18. Powder drugs.
19. Solubilities.
20. Sterilization.

21. Committee on drug rules.
22. Publicity.
23. Procedure.
24. Date when next Pharmacopoeia becomes official.
25. Spanish edition.
26. Supplement.

The scope of the Pharmacopoeia is one of the principal points about the Pharmacopoeia which is interesting to medical men. It is stated as follows:

"The object of the Pharmacopoeia is to provide standards for the drugs and medicines of therapeutic usefulness or pharmaceutical necessity sufficiently used in medical practice throughout the United States and its possessions; to lay down tests for the identity, quality and purity of these; to insure, so far as possible, uniformity in physical properties and active constituents.

It is recommended that the Committee on Revision be authorized to admit into the Pharmacopoeia a carefully selected list of medicinal substances of known origin, but no substances or a combination of substances shall be introduced if the composition or mode of manufacture thereof be kept secret, etc., etc.

On motion of your representative, the following instruction to the Committee on Revision increased the scope of the Pharmacopoeia.

"That the Convention authorize the Revision Committee to include in the body of the Pharmacopoeia such diagnostic reagents or drugs as are administered to patients for the purpose of diagnosis where they deem such admission advisable." It was here intended to include such substances as phenolsulphonphthalein now so widely used as a test of the functional activity of the kidney. The Convention adjourned May 12th and the committee then went into session.

The spirit of the Convention was radically different from that of 1910 when the medical men received very scant attention due to the lack of interest by the medical men in the Convention. It seems to have been realized by the Pharmacists, that unless more deference were paid to the medical opinion that the Pharmacopoeia would become purely a pharmaceutical organ and would lose a great deal of its value.

Respectfully submitted,

A. S. Loevenhart, M. D.

PROGRAM ANNUAL ASSEMBLY, TRI-STATE DISTRICT MEDICAL ASSOCIATION.

Waterloo, Iowa, October 4th, 5th, 6th and 7th.

Headquarters, Russell Lamson Hotel.

October 4th, 1920.

8:00 to 10:00 A. M.

Registration for Doctors and Ladies at First Congregational Church, corner North Fourth and South streets.

10:00 to 12:00 A. M.

Address and diagnostic clinic (Pediatrics). Dr. Julius P. Sedgwick, Professor of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota. Dr. Frederick C. Rodda, Assistant Professor of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota.

1:00 to 3:00 P. M.

Diagnostic Clinic (Medical). Dr. William Engelbach, Professor of Medicine, St. Louis University, School of Medicine, St. Louis, Missouri. Dr. Charles L. Mix, Professor of Medicine, Loyola University, School of Medicine, Chicago, Illinois. Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota, Medical School, Minneapolis, Minnesota.

3:30 P. M.

Diagnostic Clinic (Surgical). Dr. John F. Binnie, Kansas City, Missouri. Dr. Robert B. Osgood, Boston, Massachusetts.

7:00 P. M.

Address of Welcome—Hon. Nelson Frisbie, Mayor of Waterloo. Response to Address of Welcome, Dr. Edwin P. Sloan, Bloomington, Illinois.

7:45 P. M.

Public Address for the Physicians and Citizens of Waterloo. Surgeon-General Hugh S. Cumming, United States Public Health Service, Washington, D. C.

9:00 P. M.

Reception and Entertainment for doctors, ladies and guests.

SECOND DAY.

October 5th, 1920.

7:00 A. M.

Diagnostic Clinic (Surgical). Dr. Robert T. Morris, Emeritus Professor of Surgery, New York Post Graduate Medical School, New York, N. Y.

Diagnostic Clinic (Medical). Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

9:00 A. M.

Malnutrition in School Children. Occurrence, significance, treatment. Dr. Fred Moore, Des Moines, Iowa.

9:20 A. M.

Report of a case of Cardiospasm with Enormous Dilatation of the Oesophagus, Dr. Thomas J. Snodgrass, Janesville, Wisconsin.

9:40 A. M.

Treatment of Inoperatable Cyst Adenoma of Ovary by Laparotomy and Radium, Dr. Paul Markley, Rockford, Illinois.

10:00 A. M.

Pheebitis in the Puerperium. (Report of a case). Dr. Edward T. Edgerly, Ottumwa, Iowa.

10:20 A. M.

Pneumococcus Peritonitis, Dr. Victor F. Marshall, Appleton, Wisconsin.

10:40 A. M.

Intermission.

11:10 A. M.

Principles of Drainage in Empyema, Dr. John F. Binnie, Kansas City, Missouri.

11:40 A. M.

The Surgical Treatment of Typhoid Carriers, Dr. Edwin Henes, Jr., Milwaukee.

AFTERNOON SESSION.

1:00 P. M.

President's Address, Dr. George V. I. Brown, Milwaukee, Wisconsin.

1:20 P. M.

The Teeth in Their Relation to Systemic Disease or Infection From the Standpoint of Radiologist, Dr. Fred S. O'Hara, Springfield, Illinois.

1:40 P. M.

Intestinal Sand, with report of a case of 20 years standing, Dr. Frank M. Fuller, Keokuk, Iowa.

2:00 P. M.

The Outlook for the Fourth Area of Surgery, Dr. Robert T. Morris, Emeritus Professor of Surgery, New York Post Graduate Medical School, New York, New York.

3:00 P. M.

Diabetes Insipidus and the Regulation of Water Balance, Dr. Leonard G. Rowntree, Professor of Medicine, University of Minnesota Medical School, Minneapolis, Minnesota.

3:40 P. M.

Tuberculosis Among Our Soldiers as Manifested by Autopsy Findings, Dr. Daniel J. Glomset, Des Moines, Iowa.

4:30 P. M.

Subject announced later. Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania Medical School, Philadelphia, Pennsylvania.

EVENING SESSION.

7:00 P. M.

Roentgenologic Aspect of Pulmonary Metastasis, Dr. Russell D. Carman, Professor of Roentgenology, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

7:40 P. M.

Encephalitis Lethargica, Dr. Charles L. Mix.

8:20 P. M.

Address, Surgeon-General Hugh S. Cumming, United States Public Health Service, Washington, D. C. General Discussion on Public Health. Dr. Cornelius A. Harper, Secretary State Board of Health, Madison, Wisconsin. Dr. Guilford H. Sumner, Executive Officer, Iowa State Board of Health, Des Moines, Iowa. Dr. Clarence St. Clair Drake, Director, Department of Public Health, Springfield, Illinois.

THIRD DAY.

October 6th, 1920.

7:00 A. M.

Diagnostic Clinic (Medical), Dr. Harlow Brooks, Professor of Clinical Medicine, University of Bellevue Hospital, Medical School, New York, N. Y.

Diagnostic Clinic (Surgical), Dr. George W. Crile, Professor of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

9:00 A. M.

Megalocolon or Hirsch-sprungs Disease, Dr. Thomas W. Nuzum, Janesville, Wisconsin.

9:20 A. M.

Tumors of the Breast, Dr. William Jepson, Sioux City, Iowa.

9:40 A. M.

Mental Reconstruction, Dr. Ralph T. Hinton, Superintendent Illinois State Hospital, Elgin, Illinois.

10:00 A. M.

Results in the Open Treatment of Fractures, Dr. Joseph F. Smith and Dr. Merrit L. Jones, Wausau, Wisconsin.

10:20 A. M.

Subsequent Treatment in Casualty Cases, Dr. Don W Deal, Springfield, Illinois.

10:40 A. M.

Intermission.

11:10 A. M.

Standardization of Methods of Treatment in Orthopaedic Surgery and in Industrial Surgery of the Extremities and Spinal Column, Dr. Robert B. Osgood, Boston, Massachusetts.

AFTERNOON SESSION.

1:00 P. M.

The Significance of Globoid Bodies and Their Cultivation by Newer Bacteriological Methods, Dr. William Thalheimer, Milwaukee, Wisconsin.

1:20 P. M.

Subject announced later. Dr. David Fairchild, Jr., Clinton, Iowa.

1:40 P. M.

The Physician as a Business Man, Dr. Charles L. Best, Freeport, Illinois.

2:00 P. M.

The Newer Conceptions of the Relation of the Liver to the Problems of Abdominal Surgery, Dr. George W. Crile, Professor of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

3:00 P. M.

Cancer of Cervix and Rectum (a plea for less radical surgery), Dr. Donald McCrae, President of Iowa State Medical Society, Council Bluffs, Iowa.

3:20 P. M.

Subject anounced later. Dr. Horace M. Brown, Milwaukee, Wisconsin.

3:40 P. M.

Basal Metabolism, Dr. Joseph S. Evans, Professor of Clinical Medicine, State University School of Medicine, Madison, Wisconsin.

4:30 P. M.

The Lessons of War Service for the Internist, Dr. Harlow Brooks, Professor Clinical Medicine, University of Bellevue Hospital, Medical School, New York, N. Y.

EVENING SESSION.

7:00 P. M.

Treatment of Acute and Chronic Fractured Os Calcis, Dr. Claude R. G. Forrester, Professor of Clinical Surgery, Chicago College of Medicine and Surgery, Chicago, Illinois.

7:20 P. M.

Removal of the Adherant Placenta in Abortions, Dr. Charles E. Ruth, Des Moines, Iowa.

7:40 P. M.

The Choice of a Cataract Operation, Dr. Harry W. Woodruff, Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College, Joliet, Illinois.

8:00 P. M.

Disorders of the Pituitary Gland, Dr. William Engelbach, Professor of Medicine, St. Louis University School of Medicine, St. Louis, Missouri.

8:45 P. M.

Cancer of the Large Bowel, Dr. Carl B. Davis, Assistant Professor of Surgery, Rush Medical College, Chicago, Illinois.

9:30 P. M.

Stereopticon Clinic—Tumor Formation in the Mineral, Vegetable and Animal Kingdoms, Commander William Seaman Bainbridge, M, C., U. S. N. R. F., Acting Operating Surgeon Brooklyn Naval Hospital, Consulting Surgeon Third Naval District, New York, N. Y.

Smoker.

Fourth Day.
October 7th, 1920.

7:00 A. M.

Diagnostic Clinic (Medical), Dr. Lewellys F. Barker, Professor of Medicine, Johns Hopkins University, Medical Department, Baltimore, Maryland.

Diagnostic Clinic(Surgical), Dr. Harvey Cushing, Professor of Surgery, Medical School of Harvard University, Boston, Massachusetts.

9:00 A. M.

Painful Shoulder (mechanics, diagnoses, and special methods of treatment), Dr. Paul B. Magnuson, Chicago, Illinois.

9:20 A. M.

Focal Infection With Special Reference to Chronic Arthritis and End Results, Dr. Walter L. Bierring, Des Moines, Iowa.

9:40 A. M.

The Medical Profession Safeguarding Americanism, Dr. Charles J. Whalen, Editor Illinois State Medical Journal, Chicago, Illinois.

10:00 A. M.

Variations in Build of Body in Relation to Disease, Dr. Charles R. Bardeen, Dean and Professor of Anatomy, University of Wisconsin, School of Medicine, President, Wisconsin State Medical Society, Madison, Wisconsin.

10:20 A. M.

Intermission.

10:50 A. M.

The Physician as a Citizen, Dr. Charles E. Humiston, Associate Professor of Clinical Surgery, University of Illinois College of Medicine.

11:10 A. M.

The Human Breast: A Plea for Well-Directed Treatment Based on a More Accurate Diagnosis, Commander William Seaman Bainbridge, M. C., U. S. N. R. F., Acting Operating Surgeon Brooklyn Naval Hospital, Consulting Surgeon Third Naval District, New York, N. Y.

AFTERNOON SESSION.

1:00 P. M.

Some Surgical Cases With a Lesson, Dr. Edward Evans, La Crosse, Wisconsin.

1:20 P. M.

Subject anounced later. Dr. Campbell P. Howard, Professor of Medicine, State University of Iowa College of Medicine, Iowa City, Iowa.

1:40 P. M.

Group Diagnosis and Therapy, Dr. Lewellys F. Barker, Professor of Medicine, Johns Hopkins University Medical Department, Baltimore, Maryland.

2:40 P. M.

Subject announced later. Dr. Hubert Work, President-Elect American Medical Association, Pueblo, Colorado.

3:40 P. M.

Intermission.

4:00 P. M.

The Special Field of Neurological Surgery, Dr. Harvey Cushing, Professor of Surgery, Medical School of Harvard University, Boston, Massachusetts.

BANQUET, 6:30 P. M.

Addresses:

Dr. Hubert Work, President-Elect American Medical Association, Pueblo, Colorado.

Eminent men of the profession who are guests of the Association and other distinguished citizens of the United States.

Presidents of State Societies:

Wisconsin—Dr. Charles R. Bardeen, Madison.
Illinois—Dr. William F. Grinstead, Cairo.
Iowa—Dr. Donald McCrae, Council Bluffs.

(Signed)

George V. I. Brown, Milwaukee, Wis., *President.*

William B. Peck, Freeport, Ill. *Managing Director.*

Domer G. Smith, Freeport, Ill. *Secretary.*

PROGRAM COMMITTEE.

John F. Pember, Janesville, Wis.
John F. Herrick, Ottumwa, Iowa.
Edwin P. Sloan, Bloomington, Ill.

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

A mid-year meeting of the Association of Industrial Physicians and Surgeons will be held in conjunction with the Health Service Section of the National Safety Council meeting in Milwaukee, Tuesday and Wednesday, September 28 and 29. The following program has been

arranged and all Wisconsin physicians are invited to take part.

PROGRAM.

Milwaukee, September 28, 1920—Tuesday A. M.

Dr. W. Irving Clark, Jr., Chairman.

Dr. C. C. Burlingame—"Doctor and Patient vs. Employer and Employee."

Dr. Harry E. Mock—"Preventive Medicine in Industry."

Dr. Carey P. McCord, Chairman—"Committee Report on Occupational Diseases."

Dr. D. B. Lowe—"The Mortality and Morbidity of the Factory Worker."

September 29, 1920—Wednesday A. M.

Dr. Otto P. Geier, Chairman.

Chairman's Address—"The Future of Industrial Medicine and Surgery."

Dr. John J. Moorehead—"Fractures Incident to Occupation."

Dr. Wm. O'Neil Sherman—"Industrial Surgery."

September 29, 1920—Wednesday P. M.

Dr. W. Irving Clark, Jr., Chairman.

Dr. A. W. Colcord—"Physical Examination of Employees."

Dr. W. A. Sawyer—Subject not reported.

Dr. H. M. Brewer—"The Dental Dispensary—Its Importance, Its Help and Cost."

CORRESPONDENCE

July 8, 1920.

The Wisconsin Medical Journal,
Milwaukee, Wisconsin.

Gentlemen:

Enclosed please find a resolution passed and signed by the entire membership of the Beloit Physicians' and Surgeons' Club.

It appears to me that this should be the stand taken by the physicians in general throughout the country, and as we are getting a "black-eye" by the careless prescribing of intoxicating liquors I wish you would publish this resolution.

The Beloit Physicians' and Surgeons' Club has received numerous letters congratulating them on their stand in this matter and I know it is the stand of the Medical Profession at large. Certainly the Medical Profession never will take the attitude of being a substitute of the saloons.

Very truly yours,
C. F. N. SCHRAM, M. D.
Surgeon.

DOCTORS WILL UPHOLD "DRY" LAW DECISION. PLEDGE U. S. AID.

The Beloit Physicians' and Surgeons' Club, comprising twenty-five practitioners of this city, this afternoon served notice on the world that its members will not prescribe intoxicating liquors except in cases of extreme necessity.

PLEDGE ENFORCEMENT AID.

This action was taken when members of the club unanimously adopted a resolution putting the club on record and pledging the assistance of physicians in the efforts of the Federal officers in enforcing the eighteenth (prohibition) amendment.

"Whereas, by constitutional amendment the United States has adopted a prohibition law;

"And Whereas, the legal right to prescribe and dispense intoxicating liquor is in the hands of the physicians of our country;

"Be it resolved, that we, the members of the Beloit Physicians' and Surgeons' Club, as patriotic citizens of the United States, do hereby place ourselves on record as absolutely upholding the letter of the law and do hereby agree not to dispense or prescribe any intoxicating liquors except in cases of extreme need.

"Be it also resolved that this club will aid the Federal government in every way possible in the enforcement of this law;

"And be it further resolved that these resolutions be published in the Beloit Daily News, expressing to the public our stand on this important matter."

P. S.—This resolution appeared in the Beloit Daily News under date of June 18, 1920.

NEWS ITEMS AND PERSONALS.

After having served three and one-half years as a naval surgeon, Dr. F. A. Nause has returned to Sheboygan, having resigned from further active duty in the United States Navy.

Racine is to have a new isolation hospital of which it may be proud the plans providing for a three-story, modern structure, to cost about $125,000.

Dr. C. C. Davin, formerly of Weyerhauser, has opened offices in Kenosha, with practice limited to diseases of the eye, ear, nose and throat. Dr. Davin has spent the past year in Chicago specializing in this subject.

Dr. G. L. Bellis, superintendent of the Muirdale Sanatorium, Wauwatosa, for the past five years, has resigned his position and left for Johnson City, Tenn., where he will take charge of the government tuberculosis sanatorium there. This hospital has 1,000 beds and will be used exclusively for service men who contracted tuberculosis during the World War.

A drive for funds with which to complete several projects and equip laboratories for research work, has been announced by Dr. J. A. Bach, head of the trustee's board of St. Mary's Hospital, Milwaukee. The drive will be made during the week of October 15.

Dr. Donald Miller, who recently lost his home and office by fire at Loyal, has located in Viroqua. He is occupying the office and apartment of Dr. M. R. Sathe who has removed to Spokane, Wash.

Dr. Homer Sylvester has removed from Montfort to 2245 Rowley Avenue, Madison.

Dr. L. J. Simon, who has practiced at Horicon for the past twelve years, has sold his practice to Dr. A. J. Hertel of New York City and will make his future home in Fond du Lac.

That Ripon is to have a hospital was assured when articles of incorporation were recently filed with the Secretary of State.

Dr. Vernon A. Chapman of Milwaukee, who was formerly associated with Dr. Nelson M. Black, has announced the opening of his office at suite 1225, Wells Building.

A stock association of local doctors has taken over the People's Hospital of Sturgeon Bay from Dr. Hilton and are planning extensive improvements, which will aggregate an expenditure of from $20,000 to $25,000.

Dr. Herbert Saylor, who before joining the service practiced at Merrill, has located at Des Moines, Iowa.

Dr. C. A. Hefty of New Glarus has sold his practice to Dr. A. E. Holdermann of Chicago. Dr. Holdermann is a graduate of Rush Medical College and has served for the past three years as resident physician at the Michael Reese Hospital, Chicago.

The Peshtigo Hospital has recently been enlarged and remodeled and Dr. W. H. Dohearty has been placed in charge of same.

Dr. George H. Reddick of Wabeno has been commissioned Passed Assistant Surgeon in the United States Public Health Service. He is stationed at the United States Marine Hospital No. 5, Chicago.

Dr. C. J. Combs of Oshkosh calls our attention to the fact that there will be a reunion of the medical officers of the Eighty-ninth Division in Kansas City, Mo., October 4. A professional and social program is being arranged by the committee. Dr. Czar C. Johnson is the secretary of the organization and any desired information can be obtained by writing him at 516 Little Building, Lincoln, Nebraska.

Because of the tendency of the general public to regard whooping cough as a trivial ailment this disease continues to exact its toll in prolonged suffering and unnecessary deaths. This indifference to a most serious disease has resulted in an alarming condition of affairs. According to the records of the State Board of Health there were 181 deaths from whooping cough in Wisconsin during the first six months of 1920, an unenviable record exceeded only once by a twelve-month year during the past seven years.

Dr. H. G. Martin has returned to Milwaukee to resume the practice of medicine after an absence of three years, during which time he studied in the east. Dr. Martin is associated with Dr. A. C. Kissling in the Majestic Building. He is a graduate of the University of Wisconsin and also of Johns-Hopkins.

Dr. John G. Barnsdale of Superior, a former resident of Stevens Point and Plover, has been paroled from the federal penitentiary at Leavenworth, Kas., after serving one year of a three-year sentence imposed after he was convicted of violating the Harrison anti-narcotic act. Dr. Barnsdale is again at Superior.

The committees appointed by the county boards of Dodge, Fond du Lac and Washington counties to arrange for a joint tuberculosis sanitarium for the three counties is taking action and will come before their boards this fall with definite plans worked out. The tri-county sanitarium will be erected in five units, and cost between $350,000 and $400,000. There will be a sanitarium proper with beds for 100 patients. The doctors in charge will have separate places of residence, while there will also be a home for nurses, one for employes, and a central heating plant. All the buildings will be of concrete, brick and steel construction, and the plant when completed will be one of the finest in Wisconsin, if not in the Middle West.

A clinic has been organized at Medford by Doctors C. E. Nystrum, G. C. Nedry and C. J. Nedry. It has been incorporated for $35,000 and a fifteen-bed hospital has recently been opened in connection with the clinic, thoroughly equipped with all modern apparatus.

At the Green Bay meeting of the American Legion Dr. Cary of Reedsville was chosen one of the two congressional delegates to the national convention to be held at Cleveland, Ohio, in September.

A school for nurses will be opened at the Holy Family Hospital, Manitowoc, in October.

DEATHS

Dr. A. M. Rodermund, who for the past thirteen years has practiced medicine at Athens, died at the home of his mother in Madison. Dr. Rodermund was born at Sun Prairie in 1882 and graduated from the college of physicians and surgeons of the University of Illinois in 1907. Shortly after his graduation, he located in Athens where he practiced up to the time of his removal to Madison about a year ago. He was a member of the Marathon County, Wisconsin State, and American Medical Associations.

Dr. John C. Adams died at his home in Superior, August 23, after a stroke of apoplexy, at the age of 53 years. Dr. Adams was born in Monticello, Minnesota, and graduated from the Bellevue Hospital Medical College in 1888. He then came to St. Paul where he served for a time as an intern in the city and county hospitals. Upon the outbreak of the Indian wars, he enlisted in the army and served for five years as an army surgeon. He located in Superior in 1890 and maintained practice there until the time of his death. Dr. Adams was a member of the Douglas County, Wisconsin State and American Medical Associations.

Dr. J. S. Walbridge of Berlin died at his home after suffering a cerebral hemorrhage, August 20. He was found sitting in his chair with the book he had been reading still in his hands. Dr. Walbridge was born in Avoca in 1849, and for some years after leaving school acted as principal of the Kingston schools. He entered the University of Michigan in 1871 and took his degree in medicine there in 1874, then beginning practice at Weyauwega. During the year of 1880, Dr. Walbridge took post-graduate work in New York and then located in Berlin. He was a member of the Green Lake-Waushara-Adams County, Wisconsin State, and American Medical Associations.

LABORATORY PRODUCTS

PITUITARY LIQUID

THE product is of standard strength. The package is dated. The doctor knows. He doesn't trust to luck.

It is Posterior Pituitary Active Principle in isotonic salt solution and is without preservatives.

½ c. c. ampoules (small dose) are labeled "Obstetrical and Surgical".

1 c. c. ampoules (full dose) are labeled, "Surgical and Obstetrical".

Either in an emergency.

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Nursing Mental Diseases. By Harriet Bailey. R. N. 175 pages. New York: The MacMillan Co. 1920.

The Duodenal Tube and Its Possibilities. By Max Einhorn, M. D., New York. Octavo of 122 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $2.50.

An Epitome of Hydrotherapy for Physicians, Architects and Nurses. By Simon Baruch, M. D., LL. D. 12 mo. of 205 pages, illustrated. Philadelphia and London: W. B. Saunders Co. Cloth, $2.00.

Our Nervous Friends. By Robert S. Carroll, M. D. 258 pages. New York: The MacMillan Co. 1919.

Diagnosis and Treatment of Brain Injuries. By Wm. Sharpe, M. D. 759 pages. 232 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920. Cloth, $8.00.

Wounds of the Lung and Pleura. By Morelli. Translated by Drs. Lincoln Davis and Frederick Irving. Boston: W. M. Leonnard, Publisher. 1920.

Human Parasitology, with Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damaso Rivas, M. D., Ph. D., University of Pennsylvania. Octavo volume, 715 pages. 422 illustrations. 18 plates. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00 net.

Advanced Lessons in Practical Physiology. For Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University. Octavo of 238 pages. 123 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $4.00 net.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl, M. D. and A. J. Blaivis, M. D. Second edition. 75 illustrations. 4 colored plates. St. Louis: The C. V. Mosby Co. 1920.

Sane Sex Life and Sane Sex Living. By H. W. Long, M. D. 151 pages. Boston: Richard G. Badger, The Gorham Press.

A General Introduction to Psycho-Analysis. By Prof. Sigmund Freud, LL. D. Authorized translation by G. Stanley Hall. President of Clark University. New York: Boni and Liveright. 1920.

The Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M. D. Second edition, revised. 290 pages. 123 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Simplified Infant Feeding. By Roger H. Dennett, B. Sc., M. D. Second edition. 381 pages. 14 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Epidemic Encephalitis. By Frederick Tillemey, M. D., Ph. D., and Hubert S. Howe, A. M., M. D. New York: Paul B. Hoeber. Illustrated. Cloth, $3.50 net.

General and Dental Pathology with Special Reference to Etiology and Pathologic Anatomy. A treatise for Students and Practitioners by Julio Endelman, M. S., D. D. S., Professor of Special Dental Pathology, University of Southern California, and A. F. Wagner, A. M., M. D., Professor of General Pathology, University of Southern California. 440 illustrations, four colored plates. St. Louis: C. V. Mosby Co.

Pathogenic Micro-organisms. By William Hallock Park, M. D., and Anna Wessels Williams, M. D. 786 pages with 214 engravings and 89 full page plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

A Diabetic Manual. By Elliott P. Joslin, M. D. Second edition. 190 pages. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Cloth, $1.75.

Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M. D., B. Sc. Eighth edition. 562 pages with 195 engravings and 9 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $6.00.

Nurses' Handbook of Obstetrics. By Joseph Brown Cook, M. D. Ninth edition. 468 pages with 189 illustrations and 4 plates. Philadelphia and London: J. P. Lippincott Co. 1920. Cloth, $3.00.

Arteriosclerosis and Hypertension. By Louis M. Warfield, A. B., M. D. Third edition. 265 pages. Illustrated. St. Louis: C. V. Mosby Company. 1920. Cloth, $4.00.

Manual of Psychiatry. By Aaron J. Rosanoff, M. D. Fifth edition. 684 pages. New York and London: John Wiley and Sons, Inc. 1920.

The Problem of the Nervous Child. By Elida Evans. 300 pages. New York: Dodd, Mead & Co. 1920.

Sanity in Sex. By William J. Fielding. 333 pages. New York: Dodd, Mead & Co. 1920.

The Psychology of Dreams. By William J. Walsh, M. D. New York: Dodd, Mead & Co. 1920.

Textbook of Dermatology. By H. Darier. Authorized translation of second French edition. 769 pages. 204 engravings and 4 plates. Philadelphia and New York: Lea and Febiger. 1920. Cloth, $8.50.

BOOK REVIEWS

An Epitome of Hydrotherapy, for Phvsicians, Architects and Nurses. By Simon Baruch, M. D., LL. D., consulting physician to Knickerbocker and Montefiori Hospitals, consulting hydrotherapeutist to Bellevue Hospital, New York City, formerly professor of hydrotherapy, College of Physicians and Surgeons, Columbia University. 12mo of 205 pages, illustrated, Philadelphia and London. 1920. W. B. Saunders Company. Cloth, $2.00 net.

So much has been written of hydrotherapy that is useless and of no practical value, that the work here reviewed will be welcomed as a concise review of the subject which gives only that which has been proven of value. The author has shown that water is an important part of our materia medica which requires the same careful preparation, exact dosage, and precise administration as do drugs. It is a sane and rational work on the subject and is recommended.

(Continued on page 200)

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ORIGINAL ARTICLES

ADDRESS OF THE PRESIDENT.*

C. R. BARDEEN, M. D.,
MADISON.

The privilege of presiding at the seventy-fourth annual meeting of the State Medical Society is one to be highly esteemed. My predecessors in the presidential chair comprise a long list of men who have added luster to the practice of medicine in Wisconsin. My own efforts have been in the field of medical education and in research in the medical sciences rather than in medical practice. That one not in active practice should be chosen to wield the gavel at the annual meeting of this society, composed as it is almost wholly of men busily engaged in practice, is only to be looked upon as a graceful recognition of the importance of close cooperation of medical research, medical teaching and medical practice.

We live in a day of centralization and standardization. Through centralization and standardization immense industries have been built up, the wealth of the country has been greatly increased, the average individual has come to count as necessities material conveniences which excel the most extravagant luxuries of the aristocrats of old. The centralization and standardization which characterize modern industry and business have invaded other fields and have markedly influenced the thought of the times. The majority of civilized mankind have learned to give up most of their individuality. They wear machine-made standardized clothes, eat standardized machine-made food, think machine-made standardized newspaper thoughts, and seek amusement in standardized motor cars and standardized canned drama. The highly gifted few retain initiative and originality and direct. The rest obey orders of those who dominate and follow the crowd. If a workman is unwilling to obey a captain of industry he may show the most slavish obedience to a labor leader. If a woman is not conscious of being told how to dress she may nonetheless follow blindly the fashions of the time. Almost lost is the individualistic art which the old fashioned workman frequently introduced with pleasure and pride into his product, be he a man making goods for sale or a woman making up her Sunday best to last for years.

The tendency to substitute machinery for personality has been more reluctantly and slowly adopted in the field of medicine than in most of the other important vocations. The great majority of physicians are still independent practitioners, each applying to the best of his ability such personal skill as he may have to the personal care of his patients. If his personal skill does not suffice he may call in a consultant but in this case he expects his individual responsibility to be respected by the consultant. He may refer the case to a specialist. For the time being the patient is thus transferred to the care of another individual. Neither practitioner nor specialist are however part of a machine. The patient gets personal care.

While these conditions in general are today characteristic of the practice of medicine we find numerous exceptions. In the field of preventive medicine and public health work, as might naturally be expected from the police powers involved, there is a high degree of centralization and standardization. In this field, also, we find too much tendency to neglect the human factor, to focus relatively too much attention on nuisances, such as bad smells from manure piles or from defective plumbing and relatively too little on the human element in the transmission of disease. It is the duty of the public health officer to see that we live in an environment clean from the standpoint both of health and of comfort. It is also his duty to reduce by all available means the liability of transmission of disease from one individual to another. In the performance of this duty he has to perfect methods for teaching personal hygiene and to make this teaching highly individualistic. Nor

*Address delivered before the State Medical Society of Wisconsin, La Crosse, Sept. 8, 1920.

can the individual teaching of personal hygiene for public welfare stop with infectious diseases. The public health officer must also see that it is applied in infant feeding and to school children in order to insure health in the coming generation of citizens. To make this teaching effective some treatment as well as advice has frequently to be given. In tuberculosis clinics and venereal clinics we see a tendency on the part of public health officers to extend diagnosis, hygienic advice and treatment when necessary to adults also, and this tendency seems bound to spread to other fields. Centralized and standardized preventive medicine is thus coming into close relation with the field of private practice through the channels of the public health officers. This general topic has been well treated by Prof. C. E. A. Winslow of Yale University (Science Vol. LI., p. 23, 1920), but can be merely alluded to here.

In medical education, standardization, if not centralization, has already reached a high point. If standardization in medical education goes much farther it will be necessary for the parents to listen carefully to the wailing of the infant in the cradle and determine from his cries whether or not he wants to study medicine. Otherwise it will not be possible to map out the prescribed course of studies leading after twenty years to matriculation in a medical school, if followed sufficiently diligently and without deviation. The standards now in force would have excluded many of the most productive men the art and science of medicine in this country has known if they had been in force when these men took up the study of medicine. Standards meant to insure a good training for the average man licensed to practice medicine should not be made so rigid as to exclude an exceptional man from making a short cut. I think we have reached the danger point in this country. Fortunately the highly centralized control of medical education threatened during the war has at least temporarily disappeared.

In the field of medical investigation there has thus far been no indication of dangerous standardization or centralization. A recent editorial in the Journal of the American Medical Association has pointed out, however, the danger to scientific research if centralization is carried too far. The most far reaching scientific discoveries are made by men who have the imagination and the daring to strike out into fields the value of which is not appreciated beforehand and the entering of which would scarcely seem worth while to the directors of an expensive centralized organization for the investigation of determined problems.

In the field of medical practice centralization and standardization have appeared at Rochester, Minnesota, developed to a degree rivalling our largest industrial establishments, and to a lesser degree at numerous other places. These highly organized clinics illustrate the advantages and disadvantages of industrial organization applied to medical practice. They seem likely to prove a greater service in the field of surgery and the surgical specialties where a definite anatomical pathological condition can be treated in a definite mechanical way than in the field of internal medicine where social and environmental factors and personal knowledge of the individual in relation to the family play so large a part.

Goldwater has recently published an article in Modern Medicine (Vol. 2, p. 1, 1920) on medical practice relating to health conservation in which he puts much wisdom into a small space. The four most important services a physician can render are (1) to preserve health, (2) to detect and arrest incipient disease, (3) to restore the sick to health and (4) to ease the sufferings of the sick, injured, old, or feeble. At present, medical education and medical attention are directed relatively too much to disease as a terminal process, too little to health as a medical problem. Physicians, improperly taught in hygiene, are unable to lead the public as they should in this important field. Health education must be largely individual and personal to be effective. The physician rightly trained is the proper person for this work. The old fashioned practitioner who watches over whole families, attending to their minor ailments as conscientiously as to their graver maladies, a friend and confessor as well as a doctor, is the physician who today as of old is doing the most along these lines and the most good in the community. The specialist as a rule ignores too much the patient as a member of a community. While public health visitors are doing good work, they are insufficiently trained in medicine to do all that should be done along these lines. Physicians do not always cooperate as they should with the social health worker. Specialists are needed in their special fields but the general practitioner interested in his patients personally and socially is of even greater

importance to the community. Lack of this personal interest on the part of many modern physicians, Dr. Goldwater thinks, is turning people to quacks who at least put up the pretense of furnishing it. Dr. Alfred Worcester in his "Nurses for Our Neighbors" has drawn a pleasing picture of the old fashioned family physician in contrast to the modern man with more scientific training but more frequently lacking in human insight and sympathy. Dr. Worcester thinks that our training schools for nurses in general bring forth a product too mechanical in attitude.

The remedy for present conditions Dr. Goldwater believes to involve a rearrangement of medical practice. Public health administrators must depend less on printed matter, less on the health visitor, more on the physician. "Before medicine can function efficiently and completely it will be necessary to restore to life and to widespread influence the family physician, modernized and powerfully supported by precious instrumentalities which were not at the command of the family physician of an earlier generation." These instrumentalities are: (1) a progressive department of health and welfare to fight off the big dangers such as a polluted water supply and epidemics, (2) centers for the study and diagnosis of obscure diseases, commanding the best specialized clinical and laboratory aid, (3) hospitals for the acutely sick equipped to carry out diagnostic therapeutic and nursing procedures which cannot be conducted as well elsewhere, (4) nurses qualified to attend the sick in their houses and (5) health visitors for the well and near well. In medical education more attention must be paid to teaching hygiene, psychology of habit and character and social science. It should cultivate human sympathy and understanding.

According to Dr. Goldwater we may expect the physicians of the future to be divisable into three groups: (1) the consulting, or hospital group, including the present laboratory workers, experts in the detection and classification of morbid processes; (2) the public health doctor who deals with the prevention and control of epidemics, the practice of public sanitation and public health education, and (3) the health doctor or body physician whose aim will be the conservation of the health of the individual. Individual instruction in personal hygiene will constitute a most important part of his work. The headquarters for the organized efforts of this group will be the district health center to which health visitors will be attached as aids.

Time precludes a further summary of Goldwater's suggestive paper. I believe that most physicians who give careful thought to the broader aspects of medical practice will agree that medical practice to be effective must be developed in the direction he has outlined. The great problem is to develop an organization of the medical profession which will preserve in the practitioner individuality, initiative, personal responsibility and personal understanding and sympathy, and at the same time place at his disposal the best scientific and social methods for caring for his patients. Closely associated with this problem is the economic one of educating the public to give adequate reward to the family practitioner who is counselor and friend as well as physician, who wards off disease and teaches how to be happy and strong, as well as helps to cure and to alleviate suffering. If the family practitioner is not given adequate facilities, if he is not given financial reward somewhat commensurate with his services, he will continue to disappear, as at present he seems to be disappearing. Those who remain in practice will become office or hospital specialists or public health officials. The average layman will turn to the patent medicine bottle or to the quack until he reaches a condition that taxes to the utmost the skill of the specialist and his own financial resources.

To what extent are we developing the right sort of medical organization in Wisconsin to meet the needs of the times?

The state board of health through the state laboratory of hygiene and the branch hygienic laboratories is doing much to place modern chemical and bacteriological laboratory methods of diagnosis at the disposal of every practitioner. The start made in this direction is a good one but it is only a start. Efforts should be made to extend the number and scope of these diagnostic laboratories as the family practitioner learns to use them until every family practitioner comes to feel that he has at hand a diagnostic laboratory capable of giving him all possible aid in the care of the health of his patients and to feel quite at home in the use of this laboratory. Such laboratories are properly supported by the public through state and local taxation. Ultimately we may hope to

see develop from them diagnostic centers, community health centers as Goldwater calls them, so widely distributed throughout the state that every family practitioner has personal access to one on which he may depend for scientific aid. Such a diagnostic center should have full time scientifically trained experts on its staff. It should offer expert aid in diagnosis in every field within the province of the well trained family practitioner. I believe that the laboratory work should include not only the ordinary chemical, bacteriological and microscopical methods of diagnosis but also methods for the study of nutrition, x-ray apparatus and similar facilities. It should be the center for the infant and child welfare work now done through the department of nursing of the state board of health and other agencies, and for such clinics as the venereal disease clinics now maintained by the state board of health. It should take the place of the tuberculosis clinics now held in various parts of the state by the Anti-Tuberculosis Association. It should be in active touch with the state psychopathic laboratory which now offers aid in the handling of mental cases and in the diagnosis of syphilis. It should have not only a skilled staff and good apparatus but also a good reference library. The family practitioner with such a center to make use of could then combine in his service to his patients the sympathy, insight and common sense of the old fashioned family practitioner with modern laboratory aids. The laborer is worthy of his hire. The public getting the service here outlined should be and probably would be able to pay such fees for service as would attract and hold capable men in a field which with all its hardships gives high rewards in satisfaction, in sense of service, and in human sympathy.

The family practitioner of the future should, as outlined by Goldwater, have as his foremost duty the warding off of disease and development of health in his patients. Much of his best work will be done in the home. But frequently he will have cases who need hospital care but for whom he himself is perfectly able to give the proper medical service. We therefore need community hospitals to which patients can be removed under the care of the family physician. Such hospitals do not need to be elaborate but should be adequate for the service attempted. They should be distinct, on the one hand, from the diagnostic centers outlined above and from hospitals with closed staffs designed primarily for specialists on the other hand. In this state but little start has been made in the development of community hospitals of the type mentioned. The open hospitals maintained by various sisterhoods and other agencies in the state to some extent take their place but most of these hospitals at present have their work to a large extent centered about the work of one or more surgeons and therefore belong rather in the domain of specialists' hospitals. In some states, as in Indiana, a good start has been made in the development of county hospitals along the lines suggested above. There has been an association formed in this state for the promotion of the erection of county hospitals as a memorial to the soldiers, sailors, nurses and others who served in the late war. Such hospitals might well be designed to serve the functions outlined above.

The family practitioner needs a diagnostic center and a community hospital supported by the public in order that he may do his work most effectively. For those of his patients who need more highly specialized care than he can furnish he must seek the aid of specialists. There is an advantage in having such specialists grouped in a diagnostic clinic with adequate hospital facilities at hand. To diagnose an obscure case specialists in various lines are frequently needed. It is expensive in time and money for the patient to be sent from the office of one specialist to that of another. It is expensive for each specialist to maintain an independent elaborate laboratory equipment. When a group of specialists combine to maintain a diagnostic clinic the overhead expense is greatly reduced and the convenience of the patient facilitated. We should therefore welcome the development of such clinics, a number of which are already in successful operation in the state. Clinics of this kind should not be looked upon as a proper mechanism with which ultimately to replace the family practitioner. They should be looked upon as a specialized department of medical practice. The closed hospital with a staff of specialists is similarily to be looked upon as a valuable specialized department of medical practice closely related to the diagnostic clinic.

The family physician of the future as pictured by Goldwater has as one of his chief functions personal instruction in hygiene to his clientel. The term most commonly applied to physicians, "doctor," means teacher. There are no more important

teachers in the community than doctors who do their full duty. Every progressive teacher must necessarily be a student in order to maintain mastery of the subject he teaches. For the physician study does not stop when the academic doors are closed. Teaching and study are lifelong interests of every practitioner who does his duty. Medical education and medical practice need to be closely correlated.

In the days of the old fashioned family practitioner the apprentice system was in vogue. Each well established physician had one or more pupils apprenticed to him. These students would go up to some medical center for lectures but the vital part of their work came from close association with the physician in his practice. They learned how to deal with people and social conditions. Modern reform in medical education began with an increase in preliminary education requirements and in the time and facilities devoted to the preclinical sciences. The standard requirements are now a four year high school course, two years of premedical college work and two years of basal science work in the medical school before clinical study is seriously undertaken. In most medical schools the clinical teaching is done in the wards and dispensaries of charity hospitals. Groups of students are shown patients selected to illustrate diseases under consideration in the course. The student is given little opportunity to take a personal interest in the patient as a person although he gets some opportunities of this kind in the dispensaries and as an intern in the wards. He gets almost no opportunity to take an interest in the patient as a social being. In this way at least the old fashioned apprenticeship method was superior to our modern methods.

The intermediate stage between the apprenticeship system of teaching and the modern methods was that of the proprietary schools. These schools were founded mainly by men who liked teaching and were supported by the fees of students. Their defects have been repeatedly pointed out. But they also had their virtues. They at least served to emphasize the love of teaching which most successful physicians possess.

Modern medical education is so expensive that the number of medical schools and the number of students admitted to each school have become greatly reduced in recent years. It has become apparent that if Wisconsin desires in the future an adequate supply of well trained physicians she must offer adequate facilities for their education. Realizing this the authorities at Marquette recently made a successful campaign for an increase of funds. Similar campaigns will have to be made in the future. The state legislature likewise at the last regular and at the recent special session was led to see the need of further state support for medical education and passed bills enabling the state university to take steps to establish a complete medical course and for the erection of a state general hospital, one of the chief functions of which is to be clinical teaching. As stated in the report of the committee on medical education of this society, those most familiar with the problems of medical education in this state believe it to be in the best interests of all to have both of our medical schools well supported rather than to have medical education in the state too highly centralized. With full recognition of the importance to the state that Marquette should be liberally supported and aided in the important work in medical education which she has undertaken I shall here devote my remarks more especially to the work in clinical teaching which we are planning at the state university.

The Wisconsin General Hospital, to be built as a memorial to the soldiers and sailors of the recent war, is designed primarily to care for patients who need specialized hospital care but could not get it without public support. It will have about three hundred beds with various departments of medicine represented. To be sent to the hospital at public expense a patient must have an appeal made to a county judge who looks into the economic merits of the case and has a medical examination made by a physician to learn if the patient would be likely to benefit by being sent to the hospital. The physician is paid five dollars and expenses for such an examination. The use of the hospital for charity patients thus rests largely in the hands of the profession of the state. It will enable the family physician to get highly specialized care for those of his patients who cannot afford to pay the fees charged by specialists and the hospitals in which specialists work.

The State of Wisconsin General Hospital will afford opportunity for training third year students in the fundamentals of clinical medicine. It is our present plan to divide the classes of the fourth and of the fifth, or intern year, into small groups

and to place each group in an affiliated hospital in Madison or some other part of the state. Such a group would act as clinical clerks during the period of residence and would acquire an intimate personal acquaintance with the members of the hospital staff, undertaking this teaching. It would be a return to the old apprenticeship system under more modern conditions. Each group of students will be sent to several hospitals in succession so as to acquire experience with varied kinds of disease and treatments. With the development of diagnostic centers for the family practitioners as outlined above these also might be made use of in clinical teaching and a still nearer approach made to the old apprenticeship system. Undergraduate and graduates would thus all become members of a community of students and teachers who in large part learn and teach by doing. The work in post graduate medical instruction now undertaken by the university will be greatly facilitated by the development of teaching hospitals in Madison and throughout the state. The postgraduate work now offered at the Milwaukee County Hospital is likewise a step in the right direction.

The physician needs to study because medicine is constantly advancing. Medicine advances because of an active spirit of investigation. The laboratories, hospitals and library at the state university stand ready at all times to be of service to anyone who takes an interest in advancing medical knowledge.

To conclude: In medical organization in this state we desire a close cooperation between physicians which will enable the profession to make its influence felt as a powerful unit and at the same time we desire to see initiative preserved. The family practitioner, the backbone of the profession, should be furnished with diagnostic centers and community hospitals under public support in order that he may combine the humanity of the old order with the science of the new. Group medicine in diagnostic clinics and staff hospitals should be encouraged for specialists. In medical education it should be recognized that every progressive physician remains a student and teacher throughout life and advantage should be taken of this fact in introducing young men into practice and maintaining their intellectual interests once they are in practice.

MOTHERHOOD AMONG THE ANCIENTS.*

BY HORACE M. BROWN, M. D.,

MILWAUKEE.

Those of you have taken pains to read the subject that has been set down against my name on the program for this meeting, will no doubt imagine that you are going to be led by the hand into an atmosphere of antiquated notions or of mushy sentimentalities; for it is an unfortunate thing that the majority of men who come out of the medical schools in these days seem to have been deprived in a great measure of an opportunity for—what had up to within the last fifty years been considered a most important part of the study of our profession, namely,—the history of medicine; and they seem to think that nothing ever really happened in the medical world until their own professors made their brilliant appearance on the earth, and poured into their student ears the pearls of wisdom, that they—the professors—had found in the mighty abysses of knowledge.

There is an old saying that "Tempora mutantur et nos mutamur in illis," in other words, "Times are changed and we are changed with them." It always comes to every student who has made a study of the history of mankind, and particularly of that branch of learning to which we have devoted ourselves; to find that such a saying may be applicable to the less important factors that go to make up human life, but that in regard to the fundamental and underlying facts and laws which govern mankind, there has been no change.

The two fundamental laws that govern all living things—The first: get nourishment; the other: reproduce your kind;—are the same today as when the pterodactyl took the place of the aeroplane and Pegasus that of the automobile. Especially is this true in regard to the conditions which have governed motherhood, as well today as in the darkest years of the most extreme antiquity.

As I have muddled among my books, I have many, many times wondered at the conceit, born of ignorance of the history of our profession, that so often manifests itself among my colleagues; and I bow in humble recognition of the knowledge of antiquity that is no less basic today than

*Read before the section on Preventive Medicine, State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920.

when Brahma handed down the wisdom of the Gods to Menu and his fellows of the priesthood in India, at a time so remote that no one has been able to estimate its beginning.

Motherhood. What does it mean? Motherhood in antiquity. How does it differ today from the days when the mutinying army of Psammaticus shouted its scorn at its leader, and exposing his genital organs, each soldier told his general that "with these things we can make our own nations."[1]

Still, I must attack the subject and endeavor to entertain, if not instruct.

Motherhood may be divided into five incidents. First, fatherhood; second, copulation and impregnation; third, gestation; fourth, parturition and fifth, lactation.

You will all admit the essential necessity for fatherhood. It is interesting to note how in the very earliest beginning of history we find that makers of nations and the producers of books of laws sought in every possible way to increase the size of their particular tribe, to multiply its members, and in so doing to endeavor to make such hygienic regulations as should preserve in its highest degree the manhood of the individuals and thereby the protection of the off-spring and the success of motherhood. For the demand for children was but after all a question of protection. One has but to read the history of the Jews or the history of the Brahministic races, to see how the single family through the force of natural law, the force of good health and the obedience to hygienic laws, came ultimately to be a great and formidable nation; how the Beni Israel through the obedience of their laws for personal and tribal hygiene, grew from the single family of Abraham,—a wandering schiek, driving his herds of goats and sheep from one place of pasture to another,—through his institution of the idea of polygamy, and sometimes through more or less questionable methods, came to be the mighty power that in the time of Solomon made its example the soul of the greater force for the health of the nations, and permitted it to produce prophets and philosophers whose teachings were to influence the entire world throughout all time.

The laws made by Moses and even those that had existed before his time, laid down rules for the purification of the body, for the purification of women after the time of menstruation, and appointed a time which was best suited for the production of conception; and other series of rules, no doubt purely empirical, which made it possible in their obedience, for the production of a strong and rapidly developing race.[2]

These laws in regard to purification were probably not original with the Jews, but undoubtedly came to them from India and were brought to India at a time so far in the background of history that we cannot trace their original; but probably they came from that Sumerian race which, sweeping westward and southward from its home in the mountainous country about Tashkent, brought into what was then the western world, the knowledge that was the result of its own experience, and which laid the foundation for laws in regard to the preservation of a proper group of men among the then western tribes, a proper group value and a proper and strong capacity for fatherhood. These laws have not changed through the Orient. They are obeyed by all Indian and Mohammedan peoples. In our own country they are the foundation of our own laws of hygiene, and are still actively in use among the Jewish people throughout the world.

Observation had taught the Sumerians that a woman was not likely to become pregnant during the menstrual period. They believed that pregnancy took place from the union of the semen of the male with what was thought to be a concocted residue from the menstrual flow, after the flow had ceased. And therefore, the woman after her menstruation went through a prescribed formula for purification, and it was recommended that the man should copulate with the wife at or before the tenth day after the menstruation. The law was empirical, but we know today that it was founded upon fairly well established fact.

Let us read one or two of the laws of Menu in regard to what should be the course of the prospective father. He was to take a wife of his own class; he was not to marry a woman that had come from a family which had produced no male children; she must not have thick hair on her body nor must she have had hemorrhoids, phthisis, dyspepsia, epilepsy, leprosy or elephantiasis; nor must he marry a girl with reddish hair or with a deformed limb; or one troubled with habitual sickness; nor one either with no hair or too much nor with inflamed eyes or who was an immoderate talker. He was to choose for his wife "a girl whose form had no defect, who

had an agreeable name, who walked gracefully like a flamingo or like a young elephant; whose hair and teeth were proper in quantity and in size and whose body was of exquisite softness."

He was to purify himself with prayer, with washing his body and repetition of texts from the Veda; if water was not to be had, he was to wash himself with sand, and he was to approach his wife in the season; that is, in the time fit for pregnancy; but except on the forbidden days of the moon he might approach her, (being affectionately disposed, even out of the due season) with a desire of conjugal intercourse. "Sixteen days and nights of each month with four distinct days neglected by the virtuous, are called the natural season of woman."

It was thought that on the even-numbered nights sons were conceived, and on the odd-numbered nights, daughters; therefore, a man was to approach his wife if he wished a son, in the due season, on the even nights. After a woman was purified by bathing after her menstrual period, she might be approached by a man pure and cleanly himself and who had performed the known religious ceremonies, and after cohabitation, both man and woman were to be purified by bathing either with water or with sand.[3]

Fatherhood further consisted in protection both of the mother and of the child, and from this law demanding protection, arose the model of our present laws which cover all forms of property, of the chastity of the wife and of the obligation of the father. For after all it was his duty to get the food and the food was property; and it was not his place to risk his life in the struggle for food that the food might be used for the nourishment and up-bringing of the "get" of another man upon the body of his woman.

I have but touched upon the margin of the subject of fatherhood among the ancients, but what I have said will give the key to anyone who stops to think; of the clear understanding of the customs among the Jews and Arabs; (for after all the Jews are but an Arabic tribe) among the Greeks, the Persians, the people of India, Egypt, the Latins and ourselves, in regard to its importance.

Perhaps the most important function of all in the matter of motherhood is that of preserving a mentally and physically sound generation of men who shall perform the important and not at all indispensable duty of fatherhood.

Conception: Conception is the next important topic for discussion. So far as I know copulation and conception have remained the same popular form of amusement through all the ages since the very beginnings of time, even when Eve led Adam astray and laid the foundation for the story of the snake; which many of us anatomists have been led to doubt, thinking that the wrong word has been used in describing the organ that Adam used in the process of bringing about conception upon Eve; and that act which was the mother of original sin, which has brought so much trouble into the world and which seems like the rock of Sisyphus, growing bigger and bigger with each year through the centuries that mankind struggles to push it up the hill away and from him. However, there is hope, for I have recently been informed by a woman who esteems herself to be very well instructed and of a very superior intellect, that the method adopted by Adam and which has been found to be so satisfactory and pleasing through the years that have followed, is very soon to be abandoned; for with the assistance of Mary Baker Eddy and her book known as Science and Health with Key to the Scriptures, a process which the lady describes as "mental conception" on the part of the female of the species is to take the place of that common and vulgar thing, that so ordinary thing, the common or garden kind of copulation; and in future there will be no need of fatherhood or copulation and conception in the ordinary way, and happiness will reign supreme throughout the world.

Personally, I have reached the age when I feel that having done my duty by the world, no more responsibility in regard to the matter of fatherhood rests upon my shoulders. And therefore, the question of "mental conception" to me is purely an academic one. However, when I consider the large number of young men growing up in the world who will be deprived of some of the privileges that have been mine and yours, I feel that they will be very much like the salmon that climbs the stream against the mighty water-fall, that struggles against risk and danger of life only to find that his purpose when he reaches the head of the river, is to swim about in cold water, dropping his semen upon the eggs at the bottom of the stream which the female salmon has spawned before his arrival. Verily, verily indeed! if it is true that "mental conception" is to take the place of the old fashioned process of copulation and

conception, may we of the passing generation look upon those who are to follow us and say, "Poor fish."

A problem naturally arises in relation to the matter of "mental conception," which were we living in the tenth century, might well arouse the schoolmen to overwhelming clouds of argument, and to an unending series of discussions of a theologico-legal character. That problem would be, "Whether a woman becoming pregnant by her own volition and by means of mental conception, would be guilty of an infraction of the sixth commandment, and thus be guilty of *adultery*. However, I leave that question to the Theologians, and the followers of the logical cult of Petrus Hispanus (Pope John XXII) and his Summulae Logicales.

In the ancient days there seemed to have been a number of diseases which were in a way attached to the function of copulation just as there are today. We know very well what some of them were, but some of them, while we have their description, have so entirely passed out of existence that it is impossible to know exactly what their nature was. For instance, the peggein or snoring disease which was prevalent at Corinth and at Antioch in the time of St. John Chrysostome. That this disease may and probably was syphilis, it is difficult to doubt.[4] It is certain that it was a form of disease acquired sexually either by natural means or by perverted forms of lasciviousness. At any rate it took the form of a destructive process of the nose and the upper jaw so that the men attacked by it stank and went about with snoring and noisy respiration. It seems to have been one of the congeners of the disease now known as gangosa, prevalent in the Phillipine Islands and in Guam. There was, of course, gonorrhea and chancroid and the curious disease of the face particularly prevalent among the wealthy people of Rome, called mentagra or mentulagra. In the form that these diseases have been described to us by the satirists of Greece and Rome, we are unable to form any real conception of its exact original, but it is presumed that it must of necessity have been a disease connected with the sexual function. Throughout the Old Testament we are struck by the frequent efforts on the part of the leaders of the Jewish people to prevent the young men of the tribes from wandering away from their own women and find that this effort of the leaders was very largely an hygienic one, the effort being for the prevention of the introduction among the Jewish people, of various sexual diseases.

All of you will recall the disease that fell upon the Jews when they went into the land of Midian and which was only arrested by the slaughtering of all those of the tribes who had indulged in sexual intercourse with the Midianitish women. The plague of Baal Peor.[5]

There was a disease that existed among the Scythians in the time of Herodotus and is spoken of in the time of Hippocrates, by which men were turned into "ennares" or men without sexual vigor or capacity for procreation. Among the Moors there were a number of diseases directly connected with the function of procreation which were called sahafatum and alohumbra and alcohosi. We learn of these diseases in the writing of Rases and of Seraphion; and Albucasis in his work on Surgery describes special forms of cauteries which were to be used in the destruction of the diseased areas in these cases. It does not become me here to speak of the various perversions of the sexual act which seemed to have been common to mankind throughout the years of recorded history. I am not here to deal with that side of the question, but simply to endeavor to prove to you that with the exception of the threatening Bolshevik process of "mental conception," the times may have changed, but we have not changed with them.

As I have previously said; among the Greeks, Romans and Indian races, Persians and Arabic tribes, purification, ceremonial in character preceded the nuptial act. It was also true that after copulation it was laid down as a law, that purification of the body should take place either by ceremonial performance or by actual washing of the body with water or cow's urine, or sand; and Mohammed, upon the establishment of his religion laid down specific rules for purification which were in harmony with those of the Bramins and those of the Jews.

The animosity of the early Christians against the Jews and their early customs, and particularly against Mohammed and his followers led them to consider such ceremonies as partaking in some degree of idolatry and even of a demoniac character. Perhaps it may in some degree be that this neglect of the body in this particular, as well as the tremendous influence of the Monkish orders during the Dark Ages in establishing in the minds of the people a contempt for the body and its func-

tions, was the cause of many of the tremendous epidemics of disease that spread throughout the Christian world between the Seventh and Fifteenth centuries.[6]

Virginity. One of the remarkable things that stands out strongly in the history of religion and medicine, is the strange value put upon virginity as a factor in the value of remedies, in the assurance of medicinal value by the collection of certain drugs by chaste virgins, of the urine of virgins, and of the birth of gods, demi-gods, heroes and great individuals as the offspring of the gods begotten upon chaste virgins. A few may be mentioned. In China, the Emperor Fo-Hi, more than five thousand years ago; in India we find Krishna, Buddha, and Salivahana, sons of the gods by virgin mothers. In Egypt, Bacchus, Perseus, Mercury, Apollo, Alexander the Great, Aesculapius and Plato.

We are gravely told that the son of Sesostris suffered for years with a disease of the eyes and that the oracles ordered him to bathe his eyes in the urine of a virgin. He sought the desired sacred water from over a thousand different women without favorable result, using even that of his wife, ever without success, until at last seeing the daughter of his gardener, and deeming her to be too low of origin to have had lovers, he found his cure in her virginial and chaste product. Whereupon he took her to wife.[7]

In ancient Greece the young girls were encouraged to develop their bodies by taking part in the athletic games of their companions and also in wrestling matches with youths. In Sparta it is known that by a custom of exposing the newborn baby to the elements immediately after birth, the matter of its survival or death, solved one of the problems of its fitness for fatherhood and motherhood. This custom is comparable to that of our Alaskan Indians who, immediately after the birth of a child took it to the seashore and plunged it into the (perhaps) icy water. If it survived it was worthy to become a member of the tribe. These customers were but an instinctive effort at maintenance of a strong and virile tribal family.

It will be readily understood from what I have previously said in regard to the demand for chasity in the wife, that from the very earliest time the matter of virginity was one of very great importance and which was emphasized in every known religion. The word "virgo" simply means an unmarried woman, but in its use has come to convey the idea of a chaste unmarried woman. That a man might be sure that his first born child should be of his own begetting, it was of importance that he should in some way feel assured of the chaste virginity of the woman he was to marry. In the early days in Italy and throughout the Papal states, there was a custom in conformity to which a girl about to be married, submitted to an examination at the hands of a number of women or even of members of the clergy, and if she were found to be *virgo intacta* a certificate was issued to that effect.

Of course, there were means by which women deceived their husbands. An examination of the writings of Arnold of Villanova, in his Brieviarri, will show that in order to deceive the new husband, women who had been unchaste filled a small air bladder which they had taken from a fish, with the blood of a chicken or dove, and introduced this extremely tenuous bladder into the vagina.[8]

Or, astringent washes were applied to the vulva and vagina for a number of days before the marriage was to be consummated, and upon the bridal day a number of leeches were applied to the labia, and removed a few hours before the woman first lay with her husband. The crustules that formed at the points of puncture of the leeches were, in the violence of the nuptial act, rubbed off and the blood exuding from these spots, and appearing upon the "camisia" of the bride were a sufficient guarantee of her virginity to deceive the happy groom. *"Dux Malorum foemina, et scelerum artifex."*

Throughout the writings of the early physicians will be found a large number of formulae for making styptic and contracting lotions with which the genitals of the bride were to be bathed, with the idea that chastity might be effectively simulated.

Besides these methods of succeeding in showing a bloody stain upon the camisia after the nominally first intercourse, there will be found in the books of the ancient writers numberless statements of methods to discover whether or not a girl was chaste.

Some of these are extremely ridiculous, as for instance: Albertus Magnus[9] states that if the stone called Karynthides, which is a black stone seamed with yellow or reddish veins and which is found in Britain and the Carpathian mountains,

were given to a woman; if she were to wash it with water or rub it between her hands, not being a virgin, at once she would pass water. Or, if she were to mictruate upon a green nettle at night in the full of the moon and were not a virgin the nettle would at once turn black. Or, if she were to smell of the powder of the root of the plant which is called in old German "mutter würtzle," at once she would sneeze and pass water, not being a virgin. It is to be remembered that it was not until almost the end of the Twelfth Century that marriage became a sacrament. Before that time a young man and woman agreeing to marry, secured the consent of their feudal lord, and in the presence of witnesses and a notary agreed to live together as husband and wife, and then went to church, heard mass and partook of the sacrament.

It was in the year 1164[10] that the counsel of the Church held at Montpelier, recognized and established marriage as a sacrament, and it may be well imagined what the attitude of the vast majority of the people was toward the matter of sexual morality before their imaginations and religious instincts were brought into play to make sexual morality a matter of salvation and of decency.

Nor were women in antiquity innocent of the desire which is common in our own time, of preventing conception; for we find among the ancient writers methods laid down for gaining this end. Johannes de Sancto Paulo, quoted by Arnold of Villanova, advises that a woman should drink each morning for three days, two half-pints‡ of the water in which the blacksmith cools his tongs, and if she do this she shall remain always sterile. Or if she shall suffumigate the vulva with the smoke from the hoofs of a mule, these being burned upon hot coals, and shall carry these fumes into the vagina by means of a funnel, she shall certainly not conceive that month, "and this is proven"; [11] and there are other methods advised.

Gestation: Our next division of the subject of motherhood in antiquity even as motherhood in the present, is the one of gestation. Here indeed we come to a subject in relation to which throughout the history of time, in the legendary law of every known people in the world, in the religion and the demonology of every race and people, there has been a factor of mystery and a profusion of ideas of sorcery, of beliefs in the possibility of gestation through the action of demons, of succubi and incubi, profound theological discussion as to the possibility of the "succubus" stealing the warm semen from the youth whom she had visited in a dream, and changing herself into an "incubus," visiting the chaste couch of the incautious virgin and in a dream impregnating her with the cold, gelid semen brought from the perspiring youth not yet half wakened from *his* dream.

One has but to read the interesting pages of Del Rio [12] or Mengi,[13] to learn of many instances where such things are recorded as having taken place and to find a firm belief in the possibility of such pregnancy, established in mediaeval Europe and throughout the Dark Ages. It is commonly supposed that but little was known in the early days in regard to such matters as superfoetation, extra-utering pregnancy, methods of performing the Caesarian operation, means for producing abortion and of the forceps which form so large a part of the active service of medical men in these days. It was believed that hydatid disease was a true pregnancy and that the hydatids were each one fetuses.

Ricobaldi and the Osnaberg Chronicle give accounts of a woman giving birth to forty children in one year, another in Poland thirty-six in one birth; and in Italy a woman who produced 300 sons in one parturition, but these stories are as nothing to the account of the Countess of Henneberg in Belgium who under the influence of a curse put upon her by a beggar woman gave birth to 365 children in one birth, half of them girls and half of them boys, and all the boys were named John and all the girls Elizabeth and they were duly baptized and died and were buried in a huge jug.[14]

[15]Aristole believed that a woman could give birth to no more than five, but there is the astonishing statement of a woman who during the reign of Frederick II, Emperor of the Romans, produced 1,514 boys at one birth. These children were all baptized by their uncle, the Bishop of Utrecht, in a barrel of holy water and they died and were buried in the same barrel. This condition was supposed to be brought about by the unusual copiousness of the semen deposited by the father at the time of impregnation. If there are any who do not believe the truth of these two stories they can go to Belgium and see the jug, or to Utrecht and see the barrel.[14]

‡Minas-heminas O. L.

The Caesarian section was done undoubtedly in India at a period long before the beginning of reliable history. We must not consider that because we live in the Twentieth Century and are an advanced people, that there can be any doubt that those peoples who had an advanced civilization at a period eight and nine thousand years previous to our own, had already considered the problems of extra-uterine pregnancy, Caesarian delivery, rupture of the uterus, the production of abortion and all of the other similar problems that face us today. In fact there are many evidences that they had done so.

As early as the Fourth Century, St. Jerome and St. Gregory Nazinzian inveighed against conditions in Rome in regard to abortion, stating that the aqueducts and fountains were plugged with the bodies of decaying fetuses, that the water was neither fit to drink nor to be used for washing of clothing, because of its foulness by decay of dead infants.[16]

The Arabs were familiar with many of the operations which are now done upon the abdominal cavities and upon the uterus. Abortion was produced freely in time of famine, and it was not until Mohammed laid down his laws against mutilation of the human body, that pre-Mohammedan surgery fell into disuse.

In the surgery of Albucasis we find a brief description of a case of ruptured uterus with escape of the fetus into the abdominal cavity, suppuration and discharge of portions of the fetus through the abdominal wall in the neighborhood of the umbilicus. Just as among many savage tribes in Australia and among the Indians of our great Northwest, certain men of the tribe were set aside to be the breeders for the tribe. In Australia the penis of men unfit for fatherhood was destroyed and only the strong members of the tribe were permitted to breed children for the tribe.[17] Among the ancient Greeks and in Persia women who were unfit to bear children were operated upon to produce abortion in case they became pregnant. Numberless medicines were used to this end among the Greeks and Romans. Instruments for this purpose as well as for assistance at the time of parturition were invented long years before the ashes of Vesuvius buried at Pompeii, those which are now to be seen in the museum in Cairo.

The modern forcep is no modern invention. Speculums for observation of the cervix of the uterus were well known. The processes of growth and development of the fetus within the womb were watched and understood. Among some of the races of the Orient, the pregnant woman was used by the kings as an oracle, and even Maxentius, the Roman emperor in the Fifth century, split open the body of the living woman, opened the womb and called upon his augurs to explain the oracular meaning of the appearance, position and development of the fetus.[18]

In a great majority of cases women of the olden days looked upon pregnancy as being a normal condition, as part of their duty to the tribe; and they were proud to be mothers; as providing sons and children to look after them in their old age. As a matter of self-preservation they looked upon pregnancy as an asset.

Fundamentally, the same conditions hold today, but in our refinement over nature we have attempted to change all that. The medical men fresh from the schools presided over by the advanced (sic) theorists of today, goes to the pregnant woman about to be confined, not with the same charity in his soul that he holds toward his favorite cow or to the chickens in his barnyard. To him pregnancy is a disease in the woman, but in the chickens and the cow it is a normal condition. Women are taught that civilization has so changed them that they are no longer fit to bear children. Of course this is piffle. Throughout the history of all time certain numbers of women have been deformed or have become deformed in the course of life before they became pregnant. The world is old and things are not changed.

The great majority of women are normal; they become pregnant by the normal process and enjoy it. They carry their children within their wombs cheerfully and with hope of happiness in their motherhood and in the protection of their offspring, but the wise young doctor knows more than they. The wise professor in the school, to make a reputation for himself and perhaps put dollars in his pocket, teaches a different doctrine. And thus the difference between the gestation of antiquity and the gestation of today is largely a problem of the perversion of the medical mind; it is the result of inordinate and absolutely unfounded conceit upon the part both of the obstetrician and of his teacher.

It would be impossible in a book of less than one thousand pages to set down all of the super-

stitions and curious customs that in different parts of the world attached themselves to the condition of gestation. Among the most curious were those relating to the beliefs in regard to establishment of the sex of the fetus. It was almost universally believed that the male child was produced from semen from the right testicle of the male combining with the female semen from the right female testicle that was supposed to come from the ovaries (in those days called testicles) uniting with a concocted residue of the menstrual blood within the womb, while the converse of these combinations of the semens produced a female child.

Among the earlier medical writings during the period when most of the knowledge of medicine was in the hands of the monks, it was thought that if a woman who deemed herself pregnant were to pass all of the urine that she made during the day into a vessel containing the leaves of the nettle, if she were pregnant, after the urine had stood through the night, the leaves of the nettle would be spotted with reddish spots if the fetus were a boy, and with yellowish spots if the fetus were a girl. Another form of oracular examination of the question as to the sex of the coming child was most curious. The sebaceous material secreted and concreted around the umbilicus of cows and which remained attached to the belly of the cow was examined by the woman's friends, and by some process of which I am ignorant, a decision was made as to whether the coming child was to be male or female.[19]

Also, by an oracular reading of the same malodorous material, a decision was arrived at as to whether the labor would be prolonged or not. The belief that the womb was capable of changing its position in the body and moving about from place to place was also a factor upon which prediction was made as to the sex of the unborn child. From the time of the Egyptians it was believed that the urine of a woman pregnant with a male child was of great medicinal value in the treatment of a number of forms of skin diseases, and when taken internally, was valuable for cholic and pleurisy.[20]

Parturition: Time will not permit me even to touch upon the many sided aspects of the problem of parturition. What I have said before will readily indicate to you that I am by no means one of those who believe that the present fad and fashion existing among women for Caesarian birth is one that is to be encouraged, nor do I believe that the experience of mankind through the last million years in anywise warrants the presumption that women in this Twentieth Century are any less competent to give birth to their children by the ordinary normal processes than they were in the beginning of time. That there are many cases of child bearing which call for direction and interference by the obstetrician, I would be the last one to doubt, but when in any man's practice during the period of its first two years, it should be found necessary to perform six and ten or fifteen Caesarian sections because of such deformity, or such exigency, I cannot believe, and I am forced against my will, after my own experience of more than 45 years, and after the observation of the experience of other men who have been equally long in practice, to believe that the only reason for Caesarian interference in the great majority of cases, is to gain by sensation, money in the pocket and the unwarranted reputation for greatness. And I believe that the profession as a whole should frown upon the present school of men who under the leadership of a distinguished Chicago professor, bring the majority of their babies into the world through the abdominal wall instead of through the vagina and vulva as nature intended.

From what has gone before you will see that up to the present time, in none of the departments into which I have divided my subject has there been any fundamental change in Nature's processes or in the function of motherhood since time began. It remained for the Twentieth Century to produce men wiser than God and stronger than Nature to prescribe how and by what means normal children carried in the wombs of normal mothers should be delivered into the world.

Anathema! Anathema!! against all such propagators of folly; swindlers in their profession and butchers of women.

Lactation: We have now reached the sixth stage in the process of motherhood. The child is born into the world, the mother has been brought to bed and is recovering from the pains and anguish of a serious, painful but natural process. There remains but one more function in motherhood which should be treated of in this paper, and that is lactation.

When one approaches the subject of lactation and the duty of the mother to her child, one at once comes in contact with one of the most preponderant elements of woman's nature; the cle-

ment of vanity. Since the very beginning of laws, we know that women, particularly of the well-to-do class, have sought almost universally to avoid the responsibility of nursing their children. In the Institutes of Menu to which I have previously referred, there will be found reference to the unnaturalness of a woman's refusing to nurse her offspring. There will also be found rules and laws regulating the class from which a wet nurse may be chosen, when for any real reason the mother is unable to nurse her child. There are specific means for purification of the nurse that is to nourish the infant, and there are curses without number for the mother, being able to so do, who refuses to nurse her child. The history of mankind in its medical literature is one long repeated plea for the health of the child and for condescension on the part of the mother to give the natural nourishment from her breasts to her new-born progeny.

Among the Arabs and the earlier Jewish peoples the period of lactation lasted for two years. In the Arabian Nights in its unexpurgated form, one gets an extremely clear idea of the social life among the Mohammedan peoples and it will be found that they also were encouraged, in fact admonished to nurse the new born child and to carry on with nursing from the mother until the child was two years old. As the earlier peoples grew rich, vice usurped virtue, and vanity took the place of mother love, and we find that the desire to avoid the responsibilities of lactation increased in a direct ratio with the accumulation of wealth.

"The great difference between the attitude of the Christians and of the Musslemans toward things relating to child bearing, is that Mohammed sanctified the passions, and condemned continence; as luxury had been by the Christians."[21]

In the writings of Hippocrates we find an appeal to mothers to nurse their children.[22] The Roman and Greek poets particularly the satirical poets like Catulus, Juvenal, Persius and Horace, all record with bitter satire the growing neglect among the wealthy women of the Roman Empire, of nursing their children.

Aulus Gellius in his "Noctes Atticae" refers most bitterly to the criminal neglect of the women of his time in this regard. The early Greek and Arabian writers including Moscion, eloquently call upon the mother to nourish her off-spring for the first nine months or year after its birth. And all of them note as do the Arabic writers later, of occurence of certain diseases that children brought up artificially suffer from, and from which those who nurse at the breast remain free.

One of the most interesting appeals to mothers that they shall nurse their children appears in the poem by Luigi Tansillo, written about 1540, called "La Balia," meaning "The Nurse"; in which he appeals to the mothers of his time to give just and proper care and milk from their own breasts, to their children.

In 1551 Thomas Phayre, an Englishman, wrote perhaps the first book in English on the diseases of children. It was called the "Book of Childhood," and in it he particularly charges the wealthy women of his time with neglect of their motherly duty. In England his book was followed by Downman, Pechy and Armstrong, and it was in the year 1650 that Glisson described rickets and specifically stated that this disease was due to failure of the child to obtain its nourishment from the mother's breast. The latter part of the same century, Mai, a professor at Heidelberg, writing under the name of Stolpertus, made an eloquent appeal to the women of Germany, that they should return to their maternal duty if they wished to breed healthy children to their Fatherland.

But all these pleas seem to be hopeless in the presence of increasing wealth, increasing luxury, increasing vanity, and increasing desire upon the part of women to occupy the posts of men and to avoid the responsibilities of their own sex.

But there is a thing to be said in excuse for the perversity of women in this particular, for a philosopher of Bologna, perhaps with some foreknowledge of the relations of the endocrines to mental processes, held that the faults of women were to be forgiven them, for the reason that they "were the work of the womb."[23] He may not have been far from right.

A word or two to correct some of the impressions that I have heard voiced by some of my colleagues as to obstetrical aid among the ancients. Since the earliest times to which the records of the Asiatic countries go, there are many citations that prove that learned women or mid-wives were in existence. In Greece and Rome the obstetrix was a recognized individual and there are very many tombstones existing in the museums throughout that great part of the world that was the Roman Empire, to prove that both men and women carried on the profession of assisting women in con-

finement, that they were held in very high esteem and that public monuments were raised to some of them at different times. It was a responsible and respected calling and that the mechanism of labor was fairly well understood, we can well believe from the chapter of the writings of Celsus, referring to pregnancy and parturition.[24]

In the Tenth or Twelfth Century, Trotula or Salerno, a learned woman in the faculty of the university of that city of Italy, wrote her celebrated treatise upon obstetrics, and Platearius, her husband, himself produced a medical poem which in some degree covered the same subject.

For many years in later Europe woman alone presided over the lying-in of the pregnant woman, and it was only as the result of persistent effort, and after bearing the ignominies of being called "man-mid-wife," that at last, beginning with the early years of the Nineteenth Century, surgeons and physicians again established their right to preside over and direct the processes of labor.

It is true that queens and the nobility at the time of their lying-in were cared for by mid-wives, and these mid-wives were under the control of surgeons; but the common people were obliged to trust their lives in the hands, during the Dark Ages and the Middle Ages, of incompetent, ignorant and dirty mid-wives.

I sometimes think that even the poor woman of those periods was better off in the hands of the ignorant mid-wife than she is today when under the care of the unscrupulous forceps wielder, and Caesarian-section-mad performer in the field of obstetrical practice.

A word more: In matters relating to instrumental delivery of the child, we know very well that instruments for that purpose existed from the earliest times of civilization. We know that among the Moors in Spain, Albucasis in the Tenth Century had designed specula and forceps for removing or assisting in the removal of the child. We know that he was familiar with the fact of super-foetation, and that he had planned methods for version of the child, and for its delivery per pedes in cases of mal-presentation as did Hippocrates 1600 years before his time.

One more problem in regard to motherhood, and I am done. The question as to when the soul of the child entered into it, was one that bothered the theologians of the Christian world for many centuries. The location of the soul in the body was a much less serious matter, but the problem as to when the soul entered the body of the child was one which pertained to its salvation; for the child unbaptized, in the womb, was subject to all the penalties for the original sin of Father Adam and Mother Eve.

That your minds may be set at rest on this matter, I will say that Ulpinus in his digest of the Canon law of the Church, states, that the soul enters into the body of the male child at about the fortieth day of gestation, while the female child does not acquire her soul until about the eightieth day. I hope this statement will set the minds of any of you who are anxious about the subject, at rest.

I do not think that it requires many more words to prove that "while the times are changed," it is not in any way to be proved that in the fundamentals of things obstetrical, we are changed with them.

The mothers of antiquity were born, grew to the age of nubility, found lovers, or one was found for them; they copulated in the manner customary in that particular period, took husbands, fooled them in the mode fashionable at the time, became pregnant, went through the act of parturition, lied to the neighbors as to what the doctor told them about it having been the hardest labor any woman ever had, and that the baby was the most beautiful he had ever seen, refused to nurse the baby (sometimes) at the end of a few months began flirting again with the husband or a new lover, became pregnant again in the customary manner and again was delivered of a baby in accordance with the latest fad in obstetrical art, even "as it was in the beginning, is now and ever shall be; world without end. Amen."

1. Diodorus Siculus. Lib. I., Sec. II. (Reductis quoque tunicis, genetalia ostendant, etc.)
2. Bible, Talmud, Mishna.
3. Institutes of Menu.
4. Rosenbaum. Lustseuche.
5. Bible.
6. Fort. Medical Economy During Middle Ages.
7. Diodorus Siculus. Lib. I., Sec. II. (praeter hortulani cujusdam, quam ex viso restituto uxorem cepit.)
8. Arnold of Villanova. Opera Omnia. Breviarii. Lib. III. Cap. VI.
9. De Mirabilibus Mundi.
10. Havelock Ellis, Psychology of Sex.
11. Villanova. vide supra.
12. Del Rio. Disquisitionum Magicarum.
13. Menghi. Arte Esorsistica.
14. Caspar Bauhin. Hermaphroditorum et Monstrorum. Cap. VIII.

15. Hist. Animalium. Lib. VII., Cap. IV.
16. De Corminin. Hist. of the Popes.
17. Burton. Arabian Nights. Foot note.
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19. Fort. Medical Economy of the Middle Ages.
20. Ebers Papyrus.
21. Fort. Medical Economy of the Middle Ages.
22. De Morbis Mulieribus.
23. Life of Casanova. Vol. XII. Page 262.
24. Dr. G. Emilio Curatulo. L'arte di Juno Lucina in Roma.

RENAL INFECTIONS.*

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FROM THE MARSHFIELD CLINIC.

The probem of renal infections is so extensive that it would be impossible to cover the entire field in the time allotted me this afternoon so I shall omit the subject of tuberculosis of the urinary tract for that is a distinct surgical entity. After presenting a brief résumé of the various types of renal infections, I shall present a series of cases that illustrate some of the difficulties in diagnoses that we have met with and in some instances demonstrate errors in surgical judgment keeping in mind the words of Emerson: "Every man in his lifetime needs to thank his faults. As no man thoroughly understands a truth until first he has contended against it, so no man has a thorough acquaintance with hindrances or talents of men until first he has suffered from the one and seen the triumph of the other over his own want of the same."

Infections of the kidney may be classed as (1) Pyelitis—an inflammation of the mucous membrane of the pelvis and calices of the kidney; (2) Pyelonephritis—an infection of both pelvis and parenchyma of kidney; (3) Pyonephrosis—where there is an accumulation of pus in pelvis or parenchyma. These are purely arbitrary divisions and it is not at all infrequent to see combinations of these conditions present. The majority of infections come through the blood stream. Ascending infection through the lymphatics has been suggested by Eisendrath, but is denied by Cabot who claims that the lymphatic stream along the course of the ureter is always away from the kidney.

Practically all organisms are excreted by the kidneys. The infections, however, due to the streptococcus or typhoid bacillus, usually yield eventually to colon bacillus. The coccus group of organisms are the pus producers and are the source of the acute suppurative kidneys with multiple small abscesses in the cortex. Cabot describes these kidneys "as large, palpable and tender, accompanied by high fever and severe prostration. The urinary findings are frequently negative except for the isolation of the offending organism."

Campbell & Rhea describe an acute infective nephritis with quite similar clinical and pathological findings due to the colon bacillus. They refer to the work of Frank who has demonstrated a

Fig. 1—Wax Casts of Normal Pelvis.

lymphatic connection between the colon and the capsule of the kidney, as the source of the infection. The colon bacillus in the vast majority of instances has a tendency to remain in the mucosa of the renal pelvis, but it may of course have an injurious effect upon the entire renal substance. The recent work of Hunner on the role that ureteral strictures play in renal infection has done much to aid us in clearing up many of these obscure problems. Hunner has found 1,000 cases of stricture of the ureter. In his series a large number had been treated for various diseases, many having been operated on for appendicitis, ovarian troubles and gall bladder disease without relief of their symptoms. As soon as the stricture was discovered and dilated the symptoms disappeared. Probably a large share of cases of pyelitis that have resisted treatment by pelvic lavage are due to the presence of a ureteral stricture and only can be cured when this obstruction to drainage is overcome.

CASE I. Mrs. H. S., Neillsville, Wisconsin. Married, age 31. Seen first March 21, 1917.

F. H. Unimportant.

P. H. Had diphtheria. Was operated for appendicitis 2 years ago. One miscarriage. Has one child.

P. C. Pain in right side and frequent urination. Loss of weight. Had a very severe attack of pain in the right side in 1915. On two or three occasions passed small amount of blood. Has had chills with

*Read at the meeting of the Ninth Councilor District, at Grand Rapids, Wisconsin, June 24, 1920.

rise of temperature, frequently as high as 102. Urination every 30 minutes. Some pain at the end of urination.

Physical examination unimportant except for pain on deep palpation over the right kidney. Right kidney was palpable.

Cystoscopic examination made at this time showed a few small injected areas in the bladder. Ureteral orifices were plainly made out but it was impossible to catheterize the right side. Examination of catheterized specimen showed pus cells. Three examinations at this time negative for tubercle bacilli.

In spite of these positive findings indicating a stricture an exploratory operation was done on the right kidney April 13, 1917. There was no gross pathology noticeable in the kidney. Kidney was drained. Then a median abdominal incision was made. A few adhesions were found in the appendix region. The end of the ureter was palpated and the lower three inches of the ureter were found to be thickened. Patient made an uneventful recovery from this operation but shortly afterwards returned with the same character of pain. After repeated trials a No. 4 catheter was inserted into the right ureter for a distance of about four inches, from then on gradually increased dilatations by using a steel stylet in the catheter, it gradually passed beyond the stricture at the lower end of the ureter. When a No. 7 catheter was passed beyond the stricture patient obtained decided relief which lasted for several months, when she had a return of the pain. In the spring of 1920 she returned complaining of a drowsy feeling, constant headache and more or less constant

Fig. 11—Pyelogram of Case I, Showing a Twist in Ureter, Stricture at Lower End of Ureter, and Distorted Pelvis.

pain in her side, no tenderness, no severe colic. Catheterization was then carried beyond a No. 9 catheter by means of a Kelly cystoscope and for past two months patient has felt better than she has in several years. Culture from urine showed colon bacilli.

The pyelogram (Fig. 2) in this case shows a definite stricture of the ureter near the bladder with dilatation of the ureter above it and kinks in the ureter probably due to the dilatation. The pelvis is deformed probably from the result of the operation. In this case operation did not relieve the patient. We should have persisted in entering the ureter and overcoming the stricture, before resorting to operative measures and we would undoubtedly have relieved the patient of her symptoms and would not have found an operation indicated.

Case II. Mrs. F. B., Rib Lake, Wisconsin. Married, age 29.

F. H. Unimportant.

P. H. Unimportant except that she was examined a year previous to admission to the hospital and a diagnosis of neurasthenia was made. Her family physician saw her in a severe attack of pain associated with nausea and vomiting, which he considered to be appendicitis. Admitted to the hospital December 9, 1919, at that time complaining of having had repeated attacks of pain which localized to the right lower quadrant, at times associated with nausea and vomiting. The general physical examination was negative with the exception of the fact that the skin was rather bronzed and there was tenderness on deep palpation over McBurney's Point. A diagnosis of chronic appendicitis was made and patient operated the next day, December 10, 1919. A chronically enlarged, thickened, infected appendix was removed and also a small ovarian cyst in the right side. The gall bladder was negative. After the operation patient had more pain, running a temperature of 102 in the evening down to 99.5 in the morning for four or five days. She had some pain in the right side, considerable distention. A catheterized specimen of urine obtained on the seventh day showed the urine contained many pus cells. Ten days after operation patient was cystoscoped and a No. 5 catheter was passed into the pelvis of the right kidney. The urine obtained had a very strong ammoniacal odor and contained pus microscopically. The kidney held 35 c.c. without pain, showing a definite hydronephrosis. A pyelogram was taken using 30 c.c. of 25% of sodium bromide.

This patient had an infection in her abdominal wound which could not have had any bearing upon her kidney condition.

This case illustrates one of lack of thorough examination. Urine report showed no albumin, no sugar and the microscopic examination, through some reason or other was not made. This demonstrates how careful one must be in making a diagnosis of chronic appendicitis without ruling out all other possible lesions, especially lesions of the urinary tract.

I show this case for it is an example of a common error in diagnosis. (Fig. 3.) The pyelogram

shows a moderately dilated pelvis with greatly dilated major calices. The minor calices are almost entirely obliterated and one cannot make out any of the cup shaped fornices that characterize the normal pyelogram. This picture is a characteristic pyelogram of an inflammatory dilatation of the pelvis.

Fig. III—Pyelogram of Case II, Distended Pelvis, Club-Shaped Calices.

CASE III. M. W., Marshfield, Wisconsin. Single, age 27.

P. H. Pleurisy with effusion five years previous, acute. Rib resection in 1909. Typhoid fever the same year. Appendectomy. 1913.

P. I. Was first seen October 17, 1914, complaining of vomiting, pain in right side of abdomen. Urinating frequently. Stools contained mucus and some blood. Urine containing pus, no albumin, no sugar. Temperature 99.6. Urine showed pus cells. Seen again a week later with diarrhoea. Was still having pain in the right lumbar region radiating downwards to the navel and also to the pit of the stomach. Was given urotropin and sodium phosphate. Then pain left her and she felt well and continued with her work until January, 1915, when she had typical renal colic. Was suffering severe pain, vomiting. Pain started in the right lumbar region extending down to the symphysis and into the thigh. X-Ray examination showed a stone in the right kidney. Did not consent to operation until March 10, 1915, when a stone was removed from the right kidney by pyelotomy. Patient left the hospital and made an uneventful recovery from this operation.

A year later returned saying that she again had pain in the right side. Examination showed many pus cells in the urine. Another X-ray was taken and a stone of the same size and same location as the former stone was found in the same kidney. She did not consent to the removal of this until August 4, 1919. Patient made an uneventful recovery from this operation as in the first instance, but she still had pain in the right side. Cystoscopic examinations were then done and a definite obstruction was met in the ureter about four inches from the bladder which could be passed by with some difficulty. Patient returned to the office at intervals of two weeks and the ureter was dilated up to the point where a No. 9 catheter passed without any difficulty. As soon as a No. 9 catheter was passed patient's symptoms disappeared and she has been at her work feeling very fine. Microscopically there is an occasional pus cell and the culture still shows a few colon bacilli. After each catheterization the kidney pelvis was irrigated with 1/1000 silver nitrate.

This case illustrates the role that calculus plays in pyelitis. The presence of an obstruction in the ureter which kept up the patient's symptoms even after the second stone was removed shows that one must always keep in mind the possibility of ureteral stricture. It is quite possible that in this instance the ureteral stricture may have played an important part in the reformation of the calculus.

The etiology of renal calculus still remains an unsettled question. To ascertain why they should reform is equally uncertain. Cabot and Crabtree report 49 per cent of recurrences in renal calculi and 29 per cent in ureteral calculi. Braasch admits of 9.8 per cent recurrences in renal calculi. Hunner believes that the presence of ureteral strictures accounts for some recurrences. Hunner believes that many ureteral and renal calculi are formed at the site of ureteral stricture and then float upward to pelvis of kidney or are passed into the bladder. This migration of calculi has

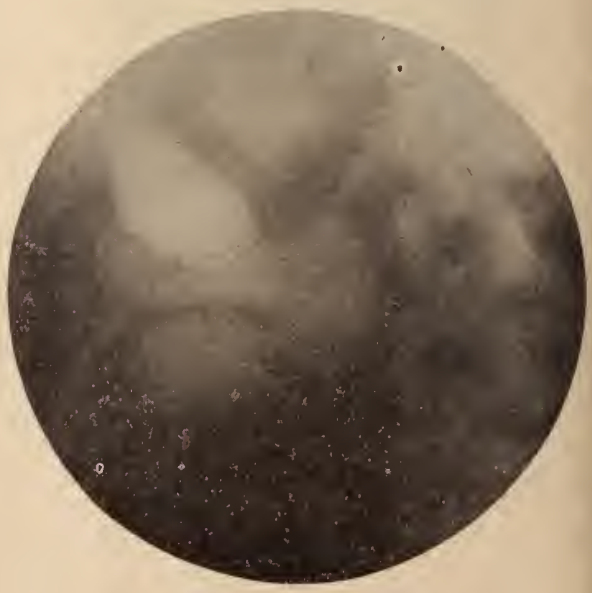

Fig. IV—Pyelogram of Case IV. Pyonephrosis.

been observed by Neff and by Kretschmer.

Case IV. Mrs. J. W. Married, age 43.

P. H. Unimportant except for repeated attacks of tonsilitis since 17 years of age. Four children living and well, oldest 20 years.

P. I. Complained of pain in right side and back. Began when she was about 17 years of age with pain in right side. This was never severe, nor colicky but has had more pain with this attack. One week ago began to have chills and slight amount of pain in right side. She noticed her urine very cloudy. Sample was taken to Dr. McGonigal and found to contain many pus cells. She was brought to Marshfield, for further examination.

General examination normal except that the right kidney is enlarged, but not tender.

Cystoscopic examination September 15, 1919.

Bladder very slightly injected. Left ureter is secreting normal colored urine in free amount. Both sides were catheterized. There was profuse secretion of pus from the right side; urine from the left side showed renal epithelial cells but no pus cells.

Cystoscopic examination September 22, 1919.

Right ureter catheterized with Bismuth catheter and 35 c.c. of 25% sodium bromide was injected into pelvis of kidney without causing any pain. Pyelogram was taken immediately afterwards and showed a dilated pelvis with four pouches in the kidney and showed that the kidney was at least three times normal size.

Operation September 23, 1919. Nephrectomy. Uneventful recovery.

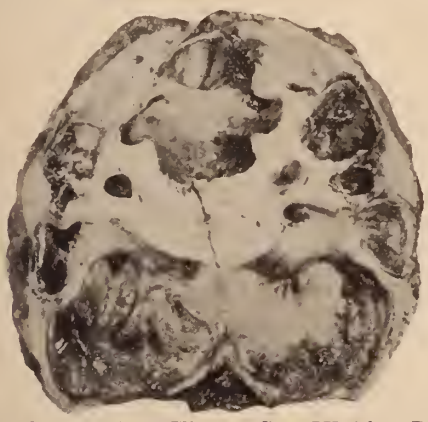

Fig. V—Photograph of Kidney, Case IV After Removal.

The pyelogram clearly indicates the widespread destruction that has taken place. It is interesting to note how closely the pyelogram shows up the pathological condition as is shown by comparison with the photograph taken after the removal of the kidney. This case is shown to demonstrate that even though the patient had relatively slight symptoms, in comparison to many others we have had, that she had an almost total destruction of the kidney.

Another important and often neglected series of cases is that of renal infections in childhood. Graves has shown that these infections while most common in girls occur also in boy subjects. B-Coli is the most frequent organism found. These cases are nearly all cleared up by giving alkalies, based upon the findings of Dick who showed that injection of B-Coli by leucocytes is most active in alkaline media. These observations are confirmed by the studies of Dyson, who also administered guaiacol, but not at the same time alkalies were given.

Case V. M. E., Marshfield, Wisconsin. Age 11.

F. H. Unimportant.

P. H. Had smallpox one and one-half years ago. No other infectious diseases.

P. I. Was seen December 20, 1919, pain in the abdomen, upper epigastrium, followed by nausea, but no vomiting. Habitually constipated. Has had similar attacks during the last two or three years. Has had some pain in back, especially on the right side. Would have pain in the abdomen, accompanied by fever, chills, lasting two or three days.

Physical examination unimportant except for slightly infected tonsils and pain over the right kidney region. Temperature 102. Pulse 110, respirations 18. Examination of urine showed many pus cells, no albumin.

Diagnosis of pyelitis was made and patient was put on alkalies and in three days temperature was normal.

Examination one month later showed urine negative.

Finally let us consider the urinary infections of pregnancy. The symptoms usually begin during the second half of pregnancy with a sudden chill, high temperature, sweating, intermission or remission of temperature. Pain in the back may be marked, with vomiting and tenderness in the abdomen. The kidneys are not always tender and a diagnosis of appendicitis is frequently made.

In treating this condition one must use some means that will bring about speedy results to avoid the possibility of death of the foetus from absorption of toxins. We feel that it is absolutely wrong to adopt such a radical measure as nephrotomy for this condition, as has been advocated by some eastern obstetricians. The etiology of this condition is rather obscure. Many cases are known to clear up simply by passing a ureteral catheter and without pelvic lavage indicating some form of obstruction to the ureter. This may be stricture, may be edema or may be pressure of the pregnant uterus upon the ureter. Most cases that we have had gave a history of having had mild attacks before they became pregnant which would lead one to the belief of the presence of a pre-existing obstruction. Danforth while admitting that pressure

of the uterus plays a part in the production of pyelitis of pregnancy, holds that the majority of cases are blood borne infections.

CASE VI. Mrs. B. T. Admitted to hospital June 15, 1920. Married, age 29.

P. H. Unimportant.

P. I. Patient is in third month of gestation. First pregnancy. For past two years patient has had more or less backache, especially on the right side. These attacks have never been severe. Does not remember of having severe pain or bladder irritability. Four days ago patient began to have chills and noticed that she was having fever. Came to the office June 15th when she showed a temperature of 101. Sent to the hospital for treatment.

General physical examination negative except for tenderness on palpation over the right kidney. Pelvic examination shows an enlarged uterus in third month of gestation, in retroverted position. On admission to hospital she had a chill and had a temperature of 103. Catheterized specimen of urine showed many pus cells. Culture showed B-Coli.

Cystoscopic examination June 16, 1920, showed a large amount of pus floating in the distention fluid

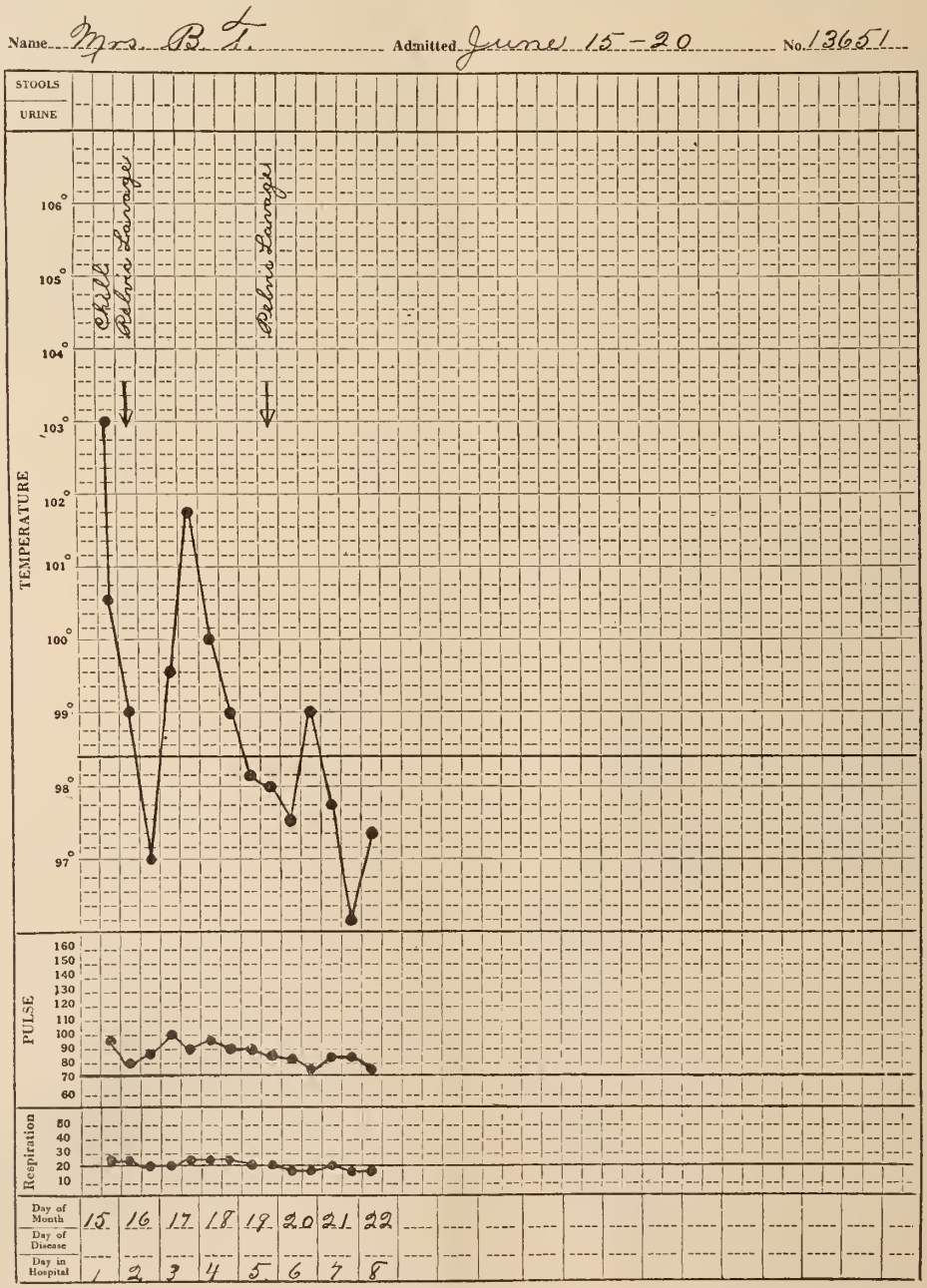

Fig. VI—Temperature Chart of Case VI.

of the bladder. Ureteral orifices are plainly made out and appear to be normal in shape and size. Urine seen coming from the right kidney is distinctly cloudy and that from the left kidney shows an occasional flocculent material in the urine. Both sides were catheterized and the urine obtained from the right kidney flowed very freely at about three times the rate of the left side. This urine was decidedly flocculent and showed pus. Urine from the left side was cloudy. Both specimens sent to the laboratory for culture and microscopic examination.

The right side was irrigated with 1/1000 silver nitrate solution.

Diagnosis: Pyelitis (right) of pregnancy.

Culture: B-Coli. Both sides.

Cystoscopic examination June 19, 1920.

Braasch cystoscope.

Bladder is clearer than at the examination made June 16th. The right ureter was catheterized. Urine obtained was strikingly different than that obtained at previous examination and was almost colorless and showed a very slight amount of flocculent material.

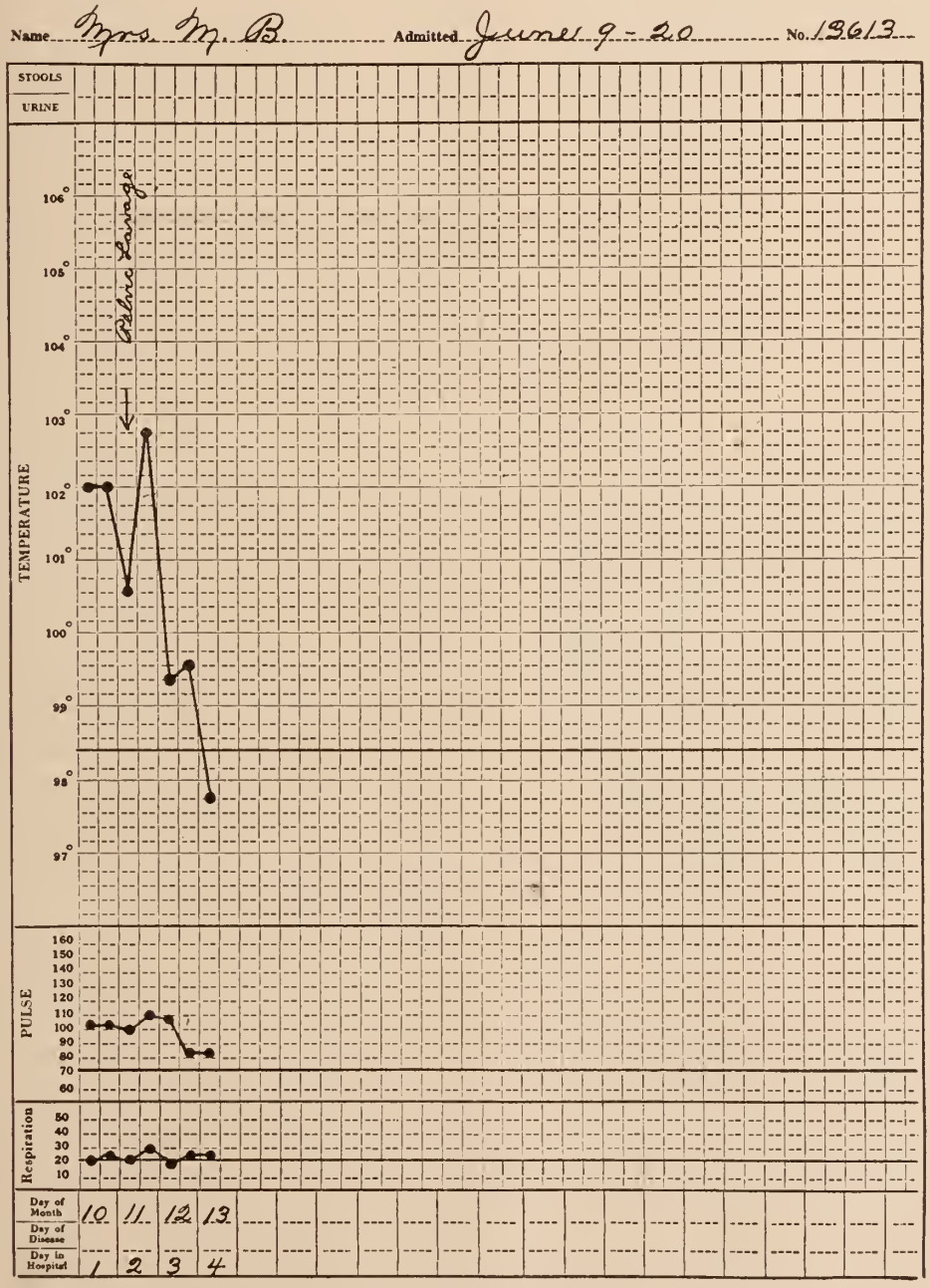

Fig. VII—Temperature Chart of Case VII.

No pus microscopically. This side was then irrigated with 1/1000 silver nitrate. Left side was then catheterized and a similar amount of urine obtained. This urine was cloudy, about the same as the previous examination. Left side was also irrigated with 1/1000 silver nitrate. Patient's general condition is decidedly better.

June 22, 1920: Patient has had no temperature for two days. Feels fine. No pain or discomfort. Left hospital today.

On July 21st patient returned for observation. General condition excellent, no pain, no urinary disturbances. A catheterized specimen obtained which showed no epithelial cells and only an occasional pus cell. A culture obtained and showed no growth.

CASE VII. Mrs. M. B. Married, age 26. Second pregnancy.

F. H. Unimportant.

P. H. Unimportant except that she had pain in right side for two or three years.

P. I. For the past three days patient has been having chills and fever, temperature has been as high

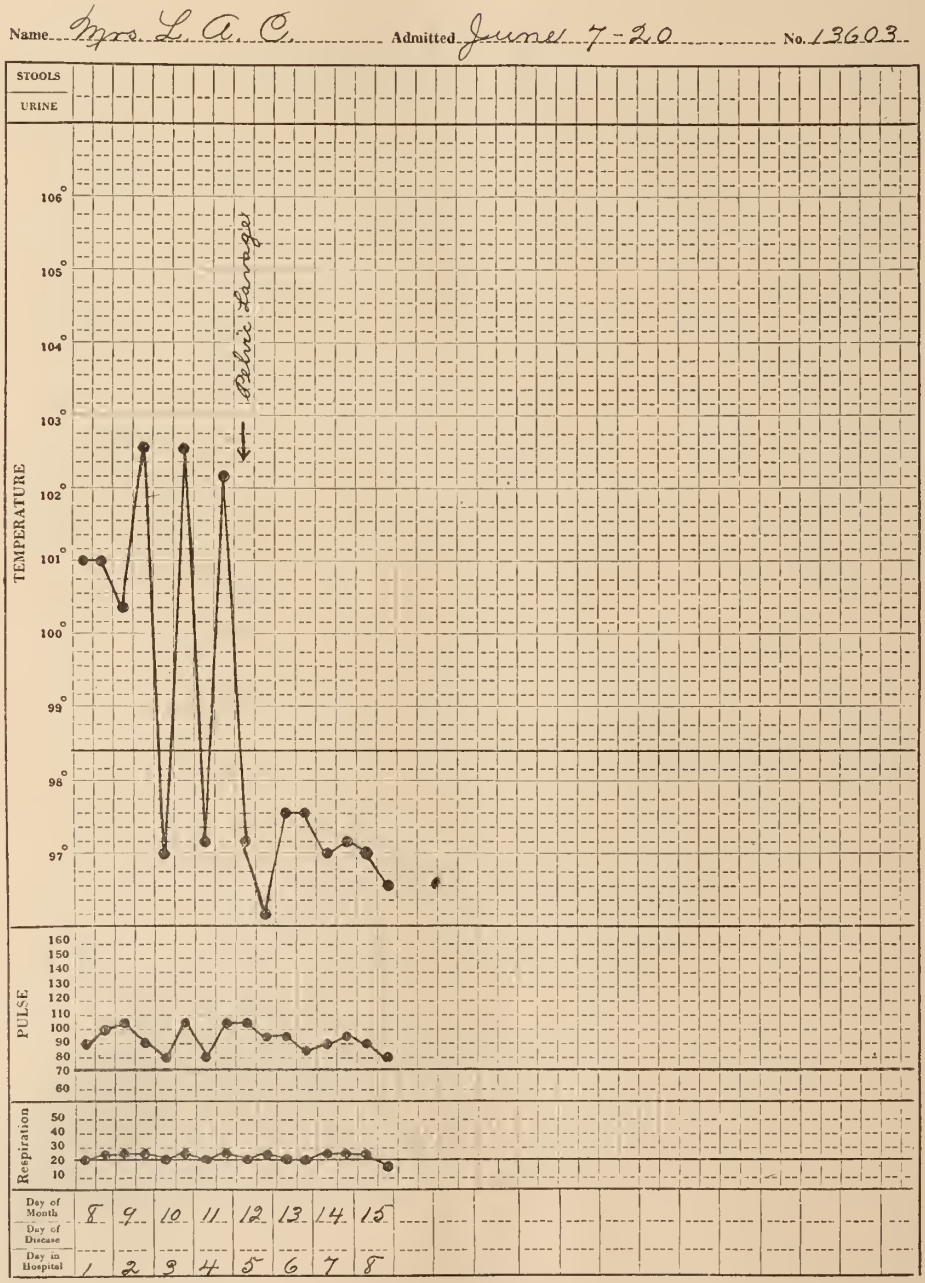

Fig. VIII—Temperature Chart of Case VIII.

as 103 to 104 while at home. Patient brought to the hospital for treatment. Physical examination negative except for slight tenderness on deep palpation over the right kidney. Kidney not palpable. Pelvic examination shows third month of gestation.

Temperature on admission was 102. Pelvic lavage was done on the day after admission and was followed by slight chill and temperature rose to 103, with almost immediate drop of temperature to normal. Patient discharged on the fourth day.

Case VIII.

Mrs. L. A. C., Marshfield, Wisconsin. Married, age 31. First pregnancy.

P. H. Unimportant except for slight bladder irritability for several years. About a year ago found she had a retroverted uterus and wore a pessary for about 4 months.

P. I. Has had considerable bladder irritability for the past three or four months. Yesterday had a chill and seemed to be having some fever. Examination on June 7th patient seemed to be having pain over the left kidney region. Examination for source of infection shows she has an infection of left antrum. Physical examination negative except for eight months gestation. Temperature on admission was 101. Temperature ranging from 103 to 97. During the first five days change of posture was attempted and patient given large doses of alkalies with large amounts of fluids without any undesirable effects. On the fifth day pelvic lavage performed and temperature dropped to normal and remained normal. Patient was delivered on the 10th day of July, low forceps delivery. Temperature at no time rose above normal after delivery and during her puerperium she showed no pain or bladder irritability.

July 22nd: Catheterized specimen of urine obtained today shows no pus cells.

Antrum drained and large amount of pus obtained.

Case IX. Mrs. B. M., Marshfield, Wisconsin. Married, age 31. Fifth pregnancy. Married nine years. Has five children, oldest 6 years, youngest 3 weeks. Seen first May 8, 1918.

P. H. and F. H. Unimportant.

P. I. Patient delivered with instruments 21 days ago. Seven days after delivery patient began to have abdominal pain, distention with rapid pulse and rising temperature. She was brought into the hospital on May 8, 1918, for operation for peritonitis.

Physical examination at this time showed a poorly nourished woman, sallow complexion, very rapid and thready pulse. Respiration rapid, temperature 103. Examination of the chest negative. Heart negative. Distention and general abdominal rigidity. Seemed to have considerable pain over both kidneys. On further inquiry it was found that she had been having bladder irritability for two or three years during which time she had frequently noticed considerable pus in her urine. A catheterized specimen at this time showed a large number of pus cells. Leucocyte count showed 22000. Patient was in such a low condition that operation was not advised. Patient died May 12th.

Autopsy was obtained and showed chest to be negative. Lungs and heart normal. Pus in all parts of abdominal cavity. This had the appearance of a colon bacillus infection. Both kidneys were then removed and were found to be about one-half destroyed. Showed multiple calculi.

Fig. IX—Right Kidney' Case IX.

This case is shown because it seems that the presence of bilateral pyelitis probably was an important factor in the production of peritonitis, which caused this woman's death. The patient's symptoms did not begin until the seventh or eighth

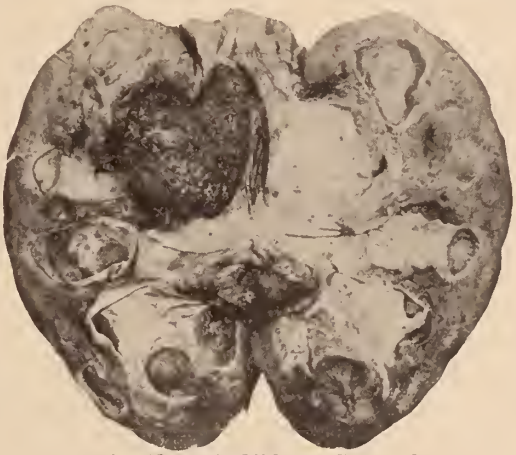

Fig. X—Left Kidney, Case IX.

day after delivery, which is considerably later that we see ordinary puerperal infection starting. This case was handled by a man whose technique cannot be questioned even though done under adverse circumstances.

To accomplish any results in the care of infection of the kidney, the first essential feature is an accurate diagnosis. This can only be arrived at by the use of the cystoscope with ureteral catheterization, and in many instances this must be supplemented by pyelograms or roentgenograms to exclude stones. In most instances one should also

use the wax bulb on a catheter as described by Hunner to determine the presence or absence of a ureteral stricture.

Having determined the type of organisms and the site of the infection one must then proceed with as conservative and safe treatment as possible. Medically there are practically only three lines of procedure: 1. The use of urotropin. This must be given at least every four hours and must be combined with some acids or acid salts, such as boric acid or sodium benzote in order to render the urine highly acid, remembering that urotropin breaks down into formolin in the kidney only in acid urine. 2. The second line of treatment is that of giving alkalies, such as potassium acetate bicarbonate or citrate or a combination of the three. Large doses must be given and at regular intervals night and day. Change of posture must also be tried.

Vaccine therapy has not given much success in any of the large clinics of this country. We have had two cases this past year that have been relieved of their symptoms following the use of autogenous vaccines. The general consensus of opinion is that the relief is only temporary. The best results are obtained by pelvic lavage through a ureteral catheter. In our hands silver nitrate 1/1000 has been used almost exclusively and has given satisfactory results. Many of our cases have not responded to treatment until we resorted to dilatation of the ureter by the use of large catheters or the wax bulb. When one has a pyonephrosis or a case of acute suppurative nephritis, nephrectomy is indicated.

As it is well recognized by many investigators, such as Hunner, Lewis and Cabot, that ureteritis and pyelitis are blood borne infections, one must not feel that he has accomplished a cure until he has found the source of the infection and removed it. This is frequently in the tonsils, nose, with its accessory sinuses or the teeth.

In conclusion we believe that infections of the kidney and strictures of the ureter are much more common than we have heretofore believed. We feel that most cases that have been operated for chronic appendicitis and have had pain after the operation were kidney or ureter cases and we wish to add a word of caution against operating any case of chronic appendicitis until lesions of the urinary tract have been scientifically excluded.

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THE ADMINISTRATION OF LARGE DOSES OF DIGITALS IN CARDIAC DISEASE.*

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An English physician, William Withering of Birmingham, was the first to bring to the attention of the medical profession the value of the foxglove. He admits that he was led to experiment with the drug because of the remarkable success which the old women in the county district near Birmingham had in giving a decoction of some plant leaves to cases of dropsy. Withering wrote his small epoch-making treatise, an analysis of 163 cases, in 1785. Like many notable discoveries it lay dormant for years and only in modern times has the great value of the drug been recognized. But as Pratt (1) so rightly says: "For some strange reason difficult to explain, digitalis has been regarded as a dangerous drug in therapeutic doses by generation after generation of clinical teachers and writers. This fear of the drug explains the failure of most practitioners to obtain any benefit even in those conditions in which it gives the most brilliant results where properly administered."

Withering (2) laid down the very definite rule for the administration of digitalis: "Let the medicine be continued until it either acts on the kidneys, the stomach (note that), the pulse, or the bowels; let it be stopped upon the first appearance of any one of these effects." Succinct but neglected advice. Just what circumstances have been responsible for the fear of digitalis is not possible to determine. The fact that it will so dramatically stop the heart of an animal in tetanic systole may have been one of the causes of this fear. Until within quite recent years our knowledge of the action of digitalis was obtained from the experiments of the pharmacologists who drew their conclusions from the effects on normal laboratory animals. To Sir James McKenzie is due the everlasting credit of demonstrating that the actual patients are the experimental animals to determine digitalis dosage and effects. Further, he showed how graphic records of the arterial pulse and venous pulse could assist in the accurate study of cardiac diseases.

Several substances have been isolated by various chemical means from the leaves of *digitalis purpurea.* There are at least three active glucosides, viz: Digitoxin, digitalin, digitalein, and a saponin-like substance, digitonin. Digitoxin is the active substance. Digitalin and digitalein have very little action. Macht says that digitonin dilates the coronary arteries and so assists in improving the circulation of the heart. Digitalis has a double action on the heart. It stimulates the vagus terminations and acts as an actual toxic stimulant, irritant to the cardiac musculature. The two vagus nerves have not exactly the same distribution in the heart. The right vagus terminates chiefly around the sinus node and in the auricle. The left vagus sends most of its branches to the A-V node and the bundle in His. Stimulation of the right vagus then tends to stop the whole heart by acting upon the S-A node, the pacemaker. Stimulation of the left vagus tends to prolong the conduction time and therefore to produce partial heart block. Eggleston (3) has shown that there is no evidence "that either digitalis or digitoxin has any direct action on the vessels when given to man even in large therapeutic doses." It may produce nausea due, as Hatcher (4) has shown, to effects upon the vomiting center in the medulla and not to any local gastric action.

Pushed to its physiological limit digitalis produces one or several of the following effects in cases of cardiac disease, (1) nausea or vomiting, (2) slowing of the pulse, (3) partial heart block, (4) coupled beats (bigeminal rhythm), also (5) diuresis, (6) diarrhea.

There is no drug which is more subject to variations in potency than digitalis. The leaves of the second year growth must be dried at a proper temperature, freed from all but the smallest amount of moisture, the stalks are to be removed, and the leaves must be kept in small (50 gm.) air tight bottles. If carefully prepared the leaves will retain their potency for several years. On the other hand, the usual manner of packing in cardboard or tin pound cartons, insufficiently sealed, and when once opened exposed thereafter to the air, will cause deterioration in potency of leaves within a few months.

All physicians must have felt many times that digitalis was a much overestimated drug. This is not strange when one considers that hardly any two preparations are of similar potency and the profession has been overstocked with various spe-

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cial preparations put out by pharmaceutical manufacturers.

It is not feasible to standardize preparations of digitalis leaves by chemical assay. It is generally admitted that the physiological standardization is the more accurate and valuable. The two methods now used are the cat method of Hatcher and the thirty-minute frog method of Gottlieb and Fraenkel.

The former is the amount of tincture digitalis injected slowly intravenously necessary to kill a cat. The latter is the amount of drug injected into the ventral lymph sac of a 30 gm. frog which will stop the heart in systole in 30 minutes. The cat unit is calculated out to about 100 mg. of leaf per kilogram of cat. The frog unit is about 20 mg. for a 30 gm. frog. A good tincture should contain 10 cat units per c.c. or 5 frog units per c.c.

For a long time I have realized that the tincture of digitalis used at the Milwaukee County Hospital made by the hospital pharmacist from a fresh Gilpin and Langdon leaf was clinically more efficacious than a tincture prepared by Parke, Davis & Co. It also seemed to be stronger than the various trade-named preparations of digitalis. It was not until this spring that I was able to test out a number of preparations. Margot, in our laboratory, has tested by the thirty-minute frog method thirteen preparations handed to him by me, and obtained from various places. Our object was not to show up any preparation, but to find out where we stood. If one tincture were twice as weak as another then we wanted to know it so that we could gauge dosage if we were forced to use that tincture. The accompanying table shows in concise form the results of Margot's tests. In the last column is the calculated toxic dose intravenously for a 150 lb. man.

It is seen that the preparation of Goetz Bros. made from fresh Allen leaves is the most potent. Our tincture at the Milwaukee County Hospital made from the Gilpin and Langdon leaves is a close second. The tincture made by Thatcher's Pharmacy also from Allen leaves is not as potent as the first Allen leaves. In this lies the reason for standardizing every batch of leaves. Were this potent Allen leaf exposed to the air for a few months it would undoubtedly show a marked decrease in potency so that one must know not only the source of the leaves, but the age and manner of preservation of the leaves. Numbers 4, 5 and 6 represent good tinctures. There is, however, no virtue in the fat-free tincture. It happened that the Squibb's fat-free tincture was very carefully preserved by the druggist who kept it in the dark in a uniform cold temperature. The tincture made from Parke, Davis & Co. fluid extract was three times as weak as our (M. C. H.) tincture. It is well known that the fluid extract has poor keeping qualities. A fluid extract may be quite potent when fresh and the tincture made from it would be correspondingly potent. The deterioration of the fluid extract is such that a tincture made from it after a few months might be almost inert and produce no therapeutic effect. We were surprised to find Digitan (Digipuratum) so low in the scale. The old Digipuratum was apparently

TABLE.

Name.	Wt. of Frog in Gm.	Amount Inject. cc.	Per Gm. Wt. cc.	Gm. Wt. Dried. Leaf.	Toxic Dose for 150 lb. Man Leaf.	Tinct.
Allen Leaf, Goetz Bros	40	0.2	.005	.0005	3.4	34
Gilpin & Langdon Leaf (C. H.)	44	0.3	.006	.0006	4.6	46
Thatcher's Preparation	42	0.3	.007	.0007	4.8	48
Dohmen & Co. (C. H.)	32	0.4	.012	.0012	8.5	85
Owl Drug Co	37	0.5	.013	.0013	9.2	92
Squibb's Fat Free	35	0.5	.014	.0014	9.6	96
Mulford's Digitol, Fat Free	36	0.6	.016	.0016	11.3	113
Mulford's Tincture	35	0.6	.017	.0017	11.6	116
Park, Davis & Co., Fluid Ext	29	0.5	.017	.0017	11.7	117
Merck's Digitan	32	0.6	.018	.0018	12.3	123
Lilly's Fat Free	30	0.6	.020	.0020	13.6	136
Digifoline, "Ciba", Ampoules	40	1.0	.023	.0023	16.2	162
Digifoline, "Ciba", Tablets	40	1.0	.023	.0023	16.2	162

a potent preparation. The recently introduced Digifoline was the weakest of all. One accustomed to obtain therapeutic effects with one of the first three preparations in certain dosage would likely be disappointed when he used No. 13 in similar amount. He would have to use nearly four times the amount of 13 to obtain the desired effect.

This table gives us some idea of the difference in potency of preparations dispensed to physicians. No wonder there is failure to help the cardiac sufferer when fifteen drops of the Lilly fat-free, for example, is given. A drop is only one-third to one-half a minim. Five minims of a tincture nearly three times as weak as a standard tincture cannot be expected to produce any effect. No wonder one hears it said that digitalis has had no effect on the case in hand.

It is not altogether the fault of the physician. He has no means of knowing whether or not a preparation is potent. He must take the word of the manufacturer, often somewhat roseate and not hitting near the truth. Then when the baffled doctor turns to his textbook and sees that the maximum dose of the tincture is 15 minims, he naturally is at a loss to know what to do. Unless he follows the current literature closely he will be inclined to take up any preparation cleverly advertised in an effort to help his ill patient. He does not read far in his textbooks before he comes across the description of cumulative action.

Much has been written and taught concerning the so-called cumulative action of digitalis and the ideas of the profession have been dominated by those clinicians who harped upon this effect. As a matter of fact, this fear is largely unfounded. Digitalis is absorbed rather rapidly and uniformly from the stomach. The tincture is absorbed the quickest. (5) It is eliminated slowly by the urine and feces, but much more rapidly than is generally believed.

The so-called cumulative action, as pointed out by Hatcher (6), is made up of several factors; the rate of absorption, the rate of elimination, and the persistence of action. A further factor which is very disturbing both from the experimental and therapeutic standpoints is the varying susceptibility of animals of the same species and weight. Hatcher in a careful investigation showed that the amount of digitalis (digitoxin) necessary to kill a cat several days after the cat had received a toxic dose intravenously was from 17 per cent to 23 per cent of the fatal dose when administered at once. In other words, the action of digitoxin when given intravenously is rapid and the effects last for several days. In fact, it has been thought that there is evidence to show a persistence of action of a month. Such prolonged action is only found in the animal which has been given a nearly fatal intravenous dose.

Worth Hale (7) made the important observation in 1911 that hydro-chloric acid decomposed digitoxin slowly, the addition of pepsin then being without influence on the rate of decomposition, while pancreatic digestion did not affect the digitoxin.

A most important point which merits a brief discussion is what becomes of the ouabain or digitalis when injected intravenously? It might be said in passing that ouabain (strophanthin) is never given by mouth owing to its exceeding variability in absorption. Hatcher and Eggleston (8) found that ouabain was fixed in the liver and kidneys of rats. It was destroyed in the large intestine and a portion was eliminated in the feces. When the bile duct is tied it is reabsorbed into the blood and excreted in the urine. Part apparently is destroyed in the liver. Digitoxin is absorbed from the gastrointestinal tract of the rat far more readily than is ouabain. It is fixed partly in the liver, part is excreted in the intestines and appears in the feces, most is destroyed in the body. It is not excreted by the kidneys. Its action is more persistent than that of ouabain.

In the cat (the animal which seems more nearly to correspond to man in response to digitalis) and the dog ouabain disappears rapidly from the blood and cannot be found except in minute traces in any organ. It is not excreted in the urine. It is probably rapidly decomposed in the liver. In regard to digitoxin not so much is known although it seems probable that the liver acts as the destroying organ.

On the basis of the new experimental evidence in respect to the persistence of action and absorption of digitalis Eggleston (9) proposed a method of administering digitalis in rather large doses. He gives 0.15 c.c. of a standardized tincture, or 15 mg. of the powdered leaf, per pound of patient divided into several doses in decreasing quantities, the initial dose being about half of the total dose. Thus in a man weighing 150 lbs. his calculated dose would be 22.5 c.c. of the tincture. About half

of this is given at one dose, a large fraction of the remainder in six hours and the remainder in one or two small doses at six-hour intervals thereafter.

It was quite a radical departure from the usual method of administration. In practically all textbooks on therapeutics and in the Treatment sections of Heart Disease in the textbooks on Medicine the maximum dose is 30 minims (2 c.c.). In H. C. Wood's book on therapeutics, edition of 1905, he states the dose of tincture digitalis as 10-20 minims (0.6-1.2 c.c.). Immediately he makes this remarkable and significant statement. "In emergencies where single doses are administered they may be very much larger than those here given. Thus, of the tincture, two fluid drachms or even half an ounce may be exhibited (4-15 c.c.); of the infusion, a wine-glassful." However, Wood does not say that he ever gave larger doses than a dram (4 c.c.) three or four times a day.

Further he states the current belief that "Digitalis yields its active principles to absorption in the intestinal tract with the greatest slowness and with some irregularity, hours usually, and sometimes days, elapsing before the full effect of the dose taken by mouth is produced." Both Eggleston and Robinson (10) have conclusively shown that in man the effect of a large dose may be produced within three hours. It is the persistence of such errors as these based on faulty technique and experimentation which has influenced physicians in their therapeutics with digitalis. The greatest clinicians were deceived and taught such errors. In 1901 at the Johns Hopkins Hospital the routine method of administration was 15 minims of the tincture every four hours for eight doses. It was then stopped without further orders. In other clinics similar doses were the rule. Here and there some bold spirit gave 30 minims. The cumulative action bugaboo and the toxic action specter were always held up to the students' gaze. Some swore by the infusion, some by the fluid extract, some gave only the powdered leaves, others the tincture. But the doses were approximately the same when reduced to terms of powdered leaf.

Many physicians now give five to ten minims three times a day and wonder why the patient does not respond. Were it not for the fact that rest in bed, purging, and a limited diet *without any digitalis* brought the heart back to compensation and reduced the edema and dyspnea we should long ago have ceased the administration of doses so small that there could be no therapeutic effect produced by them. One might just as well give distilled water as to give five or ten minims and expect a therapeutic action.

Various preparations have been put on the market by enterprising drug firms and have been sold to the profession by traveling spellbinders. Among them are digalen, digitol, digitalysatum, digipuratum, digifoline, etc. The doses recommended are from 5 to 15 minims. Marvellous effects are said to be produced. Some, like digitol, have been widely exploited as fat-free digitalis, free from nauseating effect. Naturally, in doses of a maximum of 15 minims no nauseating effect would usually be produced. As nausea is an indication of the physiological action of digitalis and is just what is desired to determine dosage, a non-nauseating preparation of digitalis would suggest lack of potency. As a matter of fact Margot in our laboratory has found digitol to be about half as strong as a tincture made from good fresh leaves and Haskell, McCants and Gardner (11) found digalen to be one-fourth as strong. In other words, if 10 c.c. of a standardized tincture produced nausea it would take 20 to 25 c.c. of digitol or 30 to 40 c.c. of digalen to produce nausea. There is no advantage of any kind to be gained by giving so-called fat-free tinctures. The amount of fat in even 10 gms. of dried leaf is a few drops at most. It is just another process added to the preparation which increases the cost to the consumer and puts profits in the pockets of the manufacturers. No preparation of digitalis should be used unless it has on the label the cat or frog unit or the number of heart tonic units in 1 c.c. of the preparation. A standard tincture should have 10 cat units to 1 c.c. or 5 frog units. The cat unit is about 100 mg. dried leaf per kg. of cat. The frog unit generally used is about 20 mg. per 30 grams of frog. That is to say it takes 100 mg. given intravenously to kill a kilogram of cat, or 20 mg. to stop a frog's heart in 30 minutes. Calculated for man this would amount to 50 c.c. of the tincture given intravenously as the total dose for a man weighing 150 lbs. It can be readily seen that a dose of 15-25 c.c. by mouth is well within the limits of toxicity even in susceptible individuals.

G. C. Robinson (12) has recently advocated the single large dose in cases of auricular fibrillation.

He reports 90 cases. He is not convinced that he has seen any harm result. He checked all his results with electrocardiographic tracings. He used a tincture standardized on the cat and his largest single dose was 25 c.c. He found that the absorption of the large dose was rapid. The effects, such as slowing of the pulse, decrease in pulse deficit, amelioration of dyspnea and cough, were noted as early as three hours after administration. The longest time taken for effects to be noticed was six hours. This is quite at variance with the older ideas. Further, he found that the action of a single dose persisted on the average about a week. In serious cases the pulse then began to rise, the pulse deficit increased, dyspnea and edema set in. In several cases a further large dose again relieved the symptoms and improved the signs. He found also that the effective doses always produced slight nausea.

For about a year and a half I have been giving digitalis in large doses to certain cases of cardiac decompensation. As far as it was possible to determine without instrumental means the cases were those of auricular fibrillation. Unfortunately, records are incomplete in many cases and other cases were not treated in this way by the intern staff. However, Dr. Altenhofen of the present staff has gone over the available material.

One recent death might appear to be due to one dose of 15 c.c. of the tincture yet this dose is only one-sixth of the calculated fatal dose given intravenously. This case was a man weighing about 200 lbs. who was brought to the hospital cyanotic, anasarcous and dyspneic. He fainted in the receiving room and fainted again when put to bed. The intern found the pulse regular, 80 to the minute, the heart dilated but no murmurs. He debated whether to give a large dose of digitalis. As the patient seemed *in extremis* he gave 15 c.c. of a standardized tincture, (the fatal intravenous calculated dose for a 200 lb. man would be about 100 c.c. of tincture and the calculated therapeutic dose 30 c.c.). The man suddenly died about two hours after the dose had been taken. No autopsy was permitted. It is probable that this man had auricular flutter with a 3:1 or 4:1 heart block. This condition was not considered by the intern who thought that drastic measures should be taken. As digitalis produces partial heart block in therapeutic doses there is the bare possibility that a rapid absorption in this case brought about a complete heart block which in the state of the heart could not be compensated for and the ventricle stopped beating. However, as no one has found that digitalis acts in a shorter time than three hours the drug can be absolved from blame.

Eight deaths have occurred while the patients were under treatment. Brief abstracts of two are given. One was a man of 25 who had adherent pericardium, auricular fibrillation and an enormous heart. He had received two doses of 10 c.c. each at ten days' interval and was again having dyspnea and cardiac distress. One morning he was given 4 c.c. by one intern. That evening another intern without knowing about the 4 c.c. gave 12 c.c. of tincture. There was some nausea shortly after the dose was given. Thirty-six hours later the patient died. No autopsy was permitted.

Another case was a man of 36 who entered hospital with general anasarca, dilated heart and jaundice. He was given 10 c.c. of tincture at once. There was no nausea and no effect on the pulse or urine. He was given 5 c.c. at 10 A. M. the following day and 5 c.c. at 4 P. M. At no time was there nausea. His condition was not improving so six days after he was given 15 c.c. (he weighed about 170 lbs.) at noon. There was no nausea. At 6 P. M. he received 10 c.c. At 12 midnight he received 5 c.c. From none of the doses was there any evidence of physiological effect. At 3:45 A. M. he was found dead sitting on a bed pan at the side of his bed. No autopsy was permitted.

For my part I cannot attribute any of these deaths to digitalis. Cardiac cases have died too often under similar circumstances. When we bear in mind that 75 c.c. of tincture intravenously is the calculated fatal dose for man, 30 c.c. in twelve hours by mouth is not a fatal dose.

Contrast these with the following case in which it does seem that excessive doses were given, yet not only did the patient's life appear to be saved but he later walked out of the hospital with a normal pulse and the feeling of well-being which he had not known for months. This man, 65 years old, entered hospital about 4 P. M. on August 11, 1919, *in extremis*. There were dyspnea, cyanosis, edema, an almost imperceptible pulse, irregular and intermittent. The heart sounds were barely audible. The lungs were dull at the bases and full of mucous rales. He was at once given by the intern morphine 0.015 (gr. ¼)

hypo and strophanthin (crystalline) gr. 1/150 by vein. One c.c. of tincture digitalis by mouth every four hours was ordered. In the words of the intern: "Two hours later the cyanosis cleared up somewhat, respirations were 40 and pulse somewhat steadier, but impossible to obtain rate. At 8 P. M. pulse rate was still steadier but rate questionable owing to arrythmia, respirations 36, cyanosis about the same. At 11:30 P. M. patient was again going bad; pulse and respiration not able to be counted. Treatment of 1 c.c. tincture digitalis discontinued and 10 c.c. tincture given by mouth. At 1:30 A. M. he was even in worse condition with temperature of 102. He seemed on the point of death. Another gr. 1/150 strophanthin given by vein and 1 c.c. tincture digitalis by vein. At 4 A. M. the pulse was countable at 112, respiration 44. At 8 A. M. he was wonderfully improved. The pulse was steady at 108, respirations 36, temperature 100.4. Cyanosis was much less. No further medication except cathartics were given. He improved progressively. Three weeks later his pulse was between 60 and 70, respirations 18, temperature 97."

This surely was heroic treatment with happy result.

In order to show that death frequently comes suddenly to cases of heart disease I cite the case of a man of 35 who entered hospital September 22nd, 1919. He had dyspnea, precordial pain, was very restless. The pulse was 124, respirations 22. There was enlarged heart with aortic diastolic murmur and slight friction sound. There was dullness at right base posteriorily with crackling rales and suppressed breath sounds. This breakdown followed a few days of heavy eating and excessive working. He was given 10 c.c. tincture on admission. He also had morphine for three nights. On September 30, eight days later note was made that he was improved, could lie flat on his back, had no dyspnea and was perfectly comfortable. On October 1, the intern made the following note: Patient is very refractory and will not stay in bed. He walked over the ward this morning. He has been kicking about his soft diet. He had strict orders to stay in bed. After lunch he was up and later went to bed. At 2:45 P. M. both interns were examining a patient three beds away. Patient was talking with some friends while he was sitting up in bed. He suddenly threw up his hands and stopped talking. He gasped for breath and was dead before he was reached by us.

I agree with Robinson that the cases which respond the best are those with absolutely irregular hearts and cardiac decompensation, the cases which we know to have auricular fibrillation. One's object is to produce partial heart block at the earliest moment. *I feel that the administration of the single large dose should be for such cases only.* In cases of decompensation without fibrillation, digitalis is valuable in doses of 2-4 c.c. every four hours. Christian has lately called attention to this again and I can attest its value.

The auricular fibrillation cases are (1) those of young people with hearts damaged either by valvular lesions or adherent pericardium as the result of rheumatic fever: (2) Cases in older persons the result of arteriosclerotic myocardial degeneration: (3) Cardio-renal cases showing definite evidences of auricular fibrillation.

It must be borne in mind that the great majority of patients with cardiac decompensation if put to bed and well cared for will improve without digitalis. That accounts for the improvement when doses of seven to ten drops (3-5 m.) of the tincture are given several times daily. Unless digitalis is given in physiological doses to the decompensated cases it might as well be left out altogether. Then one may ask why give the drug at all if most people recover when put to bed? The answer is that they improve more quickly when given the physiologic dose and certain cases improve only when given proper doses.

Among the cases treated two are here cited in brief in order to show what may be expected from the single large dose.

A young man of 22 presented himself with dyspnea, swelling of the feet and abdomen. He had had dyspnea on exertion for years. About 12 years of age he had articular rheumatism and had never been strong since. He had an enormous heart with all the signs of adherent pericardium. The pulse was irregular, there were extrasystoles and pulse deficit. He was put in hospital and 10 c.c. of a standardized tincture given at 7 P. M. His pulse then was about 120. Within four hours his dyspnea had ceased, he slept quietly, his pulse was 80. It remained approximately at that figure until he left the hospital two weeks later. Appetite returned the day after the digitalis and urination was quite free.

A woman, single, 36 years old, had had a bad

heart for several years. Two years ago she was warned not to accept a trying position. She attempted it, had to give up and since then she has been unable to work. All her teeth were extracted and she was otherwise outrageously handled. When I saw her she was in a bad way. For weeks she had been taking salts every day. She passed very little urine. She had no appetite. She could not lie in bed at night for more than a brief period. She had not lain flat in bed for months. She was dyspneic on the slightest exertion. She was cyanotic, dyspneic, with enlarged liver, fluid in the peritoneal cavity and edema of the legs up to the hips. The heart was enlarged, dilated, with murmurs at apex and base, many extrasystoles. The pulse was irregular and intermittent and there was a marked pulse deficit. She received 10 c.c. of a standardized tincture at 7 P. M. She was slightly nauseated. By 10 P. M. she was able to lie down with two pillows. By morning she was passing large quantities of urine, she felt hungry and the bowels moved spontaneously. Within twenty-four hours the edema and ascites had disappeared. For two days her diet was 200 c.c. milk four times daily. The food was then increased.

Electrocardiograms showed auricular fibrillation. Ten days later the feet were swollen slightly and there was mild dyspnea. She was given 2 c.c. twice daily, then after a few days 1 c.c. twice daily. Under this treatment she has been able to do clerical work and physically is comfortable. Electrocardiograms six months after she was first seen show auricular fibrillation but no extrasystoles and a fairly regular ventricular beat.

The largest single dose which I have given is 20 c.c. of the tincture. This was given to a man weighing over 200 lbs. There was no nausea. He developed kidney signs as well as cardiac signs, grew progressively worse and in a despondent fit killed himself. He had 20 c.c. on two occasions.

From a safe therapeutic standpoint it is suggested that the method of Eggleston and that of Robinson be combined. It will be recalled that to produce the best result the dose of digitalis should produce slight nausea. The problem then is to bring the patient to this stage at the earliest possible moment, then stop the digitalis. The procedure would be to calculate the maximal dose on the basis of .1 c.c. of tincture per pound of patient. Give the single dose 10 to 20 c.c. If this produces nausea, that is the dose and no more is to be given. If no symptoms are produced then give one-half the initial dose in six hours, a fraction of this (about one-half) in another six hours and a fourth dose of the same amount as the third dose in six hours should no nausea be produced and no change in pulse be noted. This would correspond to .15 c.c. per pound as Eggleston recommends. There are advantages in this method which will readily occur to anyone. This is our practice now.

I would not be understood to recommend these large doses indiscriminately. Great care and judgment must be used if the patient has had any digitalis for ten days previously. Minim doses might be disregarded. This is a radical departure from recognized procedure and one should proceed slowly in acting contrary to the teachings of the masters of medicine. But the masters of medicine have not always been right and time and newer methods show up long believed errors.

I would urge caution in the administration of the large doses. Especially important is the *accurate knowledge* of the *character* of the *cardiac arrhythmia.* In the great majority of cases this can easily be determined by examination with the stethoscope and by the palpation of the pulse. Occasionally a case is seen where there are all the signs of fibrillation without the actual fibrillating auricles. Should this be flutter it may be risky to give a large dose. This should be suspected when the pulse is regular and below one hundred beats per minute in the presence of all the signs of decompensation. A maximum dose of 4 c.c. every four hours until effects are noted would seem safer in such a case.

Finally, digitalis is one of the drugs which has a very definite action upon man. It is also capable of producing toxic effects. It is a life-saver when administered properly. It is worthless when administered improperly. To give five or ten drops twice or three times daily is of no value. I would not urge all to try the large doses but I would most emphatically urge doses of 2-4 c.c. repeated at four hour intervals until physiological action begins. Then stop the digitalis. The action persists for days so that no more is needed once the tolerance has been reached. After a week or ten days one may then use the tonic doses 1 to 2 c.c. once or twice daily for weeks. Patients have been known to take digitalis off and on for years. Often as small a dose as 10 minims once a day seems to keep them free from distress-

ing symptoms. I am sure that if the doctors knew the potency of the tincture they were prescribing and gave sufficiently large doses, they would have far better success with their cardiac patients.

Be bold, but not too bold, conservative, but not a standpatter, above all be skeptical but with an open mind in regard to digitalis.

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ANESTHESIA AND ANALGESIA IN THE MANAGEMENT OF DYSTOCIA.

BY C. HENRY DAVIS, M. D.,
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There are numerous suggestions in the literature of the ancients which indicated that the pain of labor was not entirely ignored and evidence that narcotic draughts were at times used. However, it is certain that no great effort was made to relieve this pain until January 19, 1847, when James Y. Simpson used sulphuric ether in a case of dystocia. Simpson says of this first case: "The pelvis of the mother was greatly contracted in its conjugate diameter from the projection forward and downward of the promontory of the sacrum; the lumbar portion of the spine was distorted; and she walked very lamely. The present was her second confinement. Her first labor had been long and difficult; she began to suffer on a Monday, and after a protracted trial of the long forceps, was at last delivered by craniotomy late on the subsequent Thursday, — and she was long in recovering —. The pains of her second labor commenced in the forenoon of the 19th. I saw her, with Mr. Figg, at 5 o'clock in the afternoon, and again at 7. The os uteri was pretty well dilated, the liquor amnii not evacuated, the presenting head very high, mobile, and difficult to touch; and a pulsating loop of the umbilical cord was felt floating below it in the unruptured bag of membranes. From 5 to 9 o'clock the pains seemed only to push the circle of the os uteri farther downwards, without increasing its dilation, or making the head in any degree enter into the pelvic brim. Assisted by Dr. Ziegler, Dr. Keith, and Mr. Figg, I shortly after 9 o'clock made the patient inhale the ether vapor. As she afterwards informed us, she almost immediately came under the anodyne influence of the ether; but in consequence of doubts upon this point, its use was continued for nearly twenty minutes before I proceeded to turn the infant, as I had previously determined to do. A knee was easily seized, and the child's extremities and trunk readily drawn down; but extreme exertion was required in order to extract the head. At length it passed the contracted brim, with the anterior part of its parietal bone deeply indented by pressure against the projecting promontory of the sacrum, and the whole cranium flattened and compressed laterally. The infant gasped several times, but full respirations could not be established. She quickly regained full consciousness, and talked with gratitude and wonderment of her delivery, and her insensibility to the pains of it. Next day I found her well in all respects. I looked in upon her on the 24th, the fifth day after delivery, and was astonished to find her up and dressed, and she informed me that on the previous day she had walked out of her room to visit her mother."

A few days later on the third of February, Simpson performed his first forceps delivery under ether and of it says: "During the whole of his severe operation the patient appeared quiet and passive. The cries of her child speedily aroused her from her anesthetised state, and she subsequently assured Dr. Moir that she had felt comparatively little or no pain during the whole operation and delivery."

In November, 1847, Simpson announced the successful use of chloroform as an anesthetic agent. Unlike ether it was first used to relieve the

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*Read before the Milwaukee Medical Society, May 11th, 1920.

pain of a normal delivery. The child was born about twenty minutes after the inhalation was begun. Simpson says: "The mother subsequently remained longer soporose than commonly happens after ether. The squalling of the child did not, as usual, rouse her; and some minutes elapsed after the placenta was expelled, and after the child was removed by the nurse into another room, before the patient awoke. She then turned round and observed to me that she had enjoyed a very comfortably sleep, and indeed required it as she was so tired, but would now be more able for the work before her. Shortly afterwards, her infant was brought in by the nurse from the adjoining room, and it was a matter of no little difficulty to convince the astonished mother that the labor was entirely over, and that the child presented to her was really her 'own living baby.'"

However the introduction of anesthesia into obstetrical practice was not an unmixed blessing. To use the words of Milne Murray: "Before the days of anesthesia, interference was limited and obstetric operations were at a minimum, because interference of all kinds increased the conscious suffering of the patient. Thus forceps and turning were used when natural efforts had failed, and such operations as the dilation of a rigid os were not attempted until it became an urgent necessity. When anesthesia became possible and interference became more frequent, because it involved no additional suffering, operations were undertaken when really unnecessary on the demand of the patient or for the convenience of the practitioner. And so complications arose and the dangers of labor increased."

When antiseptic and later aseptic methods were added to anesthesia it was generally believed that labor had become a much safer and easier ordeal. Yet in the United States there is still one mother lost for about every 154 live births. Meddlesome midwifery is undoubtedly responsible for many of these deaths. Lack of judgment and inadequate hospital facilities are the cause of many more.

Hundreds of thousands of women have benefitted from the relief of labor pain afforded by ether and chloroform. Nevertheless, the limitations of those anesthetics as used in obstetrics are now generally recognized. Chloroform in particular is a source of considerable danger to both the mother and the unborn child, yet I am among those who believe that, if properly used, any of the anesthetic agents are less dangerous than the extreme suffering which may come from the expulsive contractions late in the second stage of labor.

A Russian, Klikowitsch of Petrograd, in 1880 was the first to use nitrous oxid-oxygen analgesia in labor. That year he reported the successful use of this anesthetic in twenty-five deliveries. The following year, Winckel of Dresden, used the nitrous oxid-oxygen analgesia in 50 deliveries, and in his Textbook of Midwifery (translated by Edgar) makes the following statement:

"Narcosis by means of laughing gas is not dangerous and may be discontinued at the will of the parturient woman; it mitigates the pain in proportion to the intelligence of the person, as stupid persons often withstand its influence for a long time before its favorable effect is felt. In most persons its inhalation produces a state of intoxication for a short time with a tendency to laughter. Women, to whom it is not administered until the stage of expulsion, can seldom be induced to inhale it quietly, while when it is administered in the first stage of labor its benificial action is at once felt and extends to the second stage. It is especially useful in primipara."

But owing to its cost, the impurity of the gases, the cumbersome method of storing the gas in large rubber bags, and the fact that it was often given to the stage of asphyxia, nitrous oxid did not come into use at that time. I can find no further evidence of its having been used in obstetrics until after Dr. Webster began to use this anesthetic in operative obstetrics when ether and chloroform were contra-indicated. In 1909, I gave the anesthetic for Dr. Webster when he performed his first cesarean section under nitrous oxid and oxygen. During that year we used this anesthetic in all types of operative obstetrics, and in one instance gave it intermittently for about two hours prior to a forceps delivery. At that time, it was used only late in labor. In 1911 Arthur Guedel of Indianapolis advocated the use of nitrous oxid-air analgesia during the second stage of labor. But the first instance recorded in which it was used for a considerable time was in July, 1913, when Doctors Lynch and Hoag confined the daughter of Mr. A. C. Clark, the maker of a gas-oxygen apparatus. Dr. Lynch says that Mr. Clark "sought at his own risk to try in his own family the method which his demonstrators were teaching for dentistry." A more or less constant analgesia was maintained for over five hours. As a result of

Dr. Lynch's enthusiasm the obstetrical staff of the Presbyterian Hospital, Chicago, began the experiments which finally in 1915 led to Dr. Webster's public announcement of its successful use after it had been tried in more than a hundred cases.

Following the publication of our technic in a series of papers and my book on Painless Childbirth, Eutocia and Nitrous Oxid-Oxygen Analgesia, it has gradually been adopted as the usual method of administering this analgesia during normal labor. My claims that self-administration was both satisfactory and safe, caused considerable opposition at first but gradually it is being adopted in all parts of the United States. Appleton in a recent paper tells of one patient "who took the gas herself at periods of every three or four minutes during an entire night,—ten hours. At the end of that time the fetal heart was as regular and of as good a quality as at the onset of labor.' I have had a number of patients who administered their own analgesia, intermittently, for more than six hours, and with perfect satisfaction.

In 1917, I conducted a series of experiments with chloroform, ether and nitrous oxid-oxygen using groups of pregnant and non-pregnant guinea pigs. A comparison of the effects of these anesthetics on the guinea pigs, with clinical observation on patients, led to the following conclusions:

1. The administration of chloroform, ether, or nitrous oxid-oxygen to pregnant or non-pregnant animals, if given over a long period of time and repeated on successive days causes degenerative changes in the tissues. The changes found in the liver are the most constant. Those following the use of chloroform are the most severe.

2. If the degeneration is not sufficiently great to cause death, the animal gradually recovers from the effect of the anaesthetic, but it seems probable that results of the injury may persist for a considerable time.

3. With ether and nitrous oxid-oxygen the changes are chiefly those of cell asphyxiation, yet it is evident that the cells recover more slowly following ether than they do after nitrous oxid. The central necrosis following chloroform is very different from that seen in asphyxiation and more permanent.

4. The long-continued use of these anaesthetics must be considered dangerous to the foetus in utero. Chloroform and nitrous oxid anaesthesia seems more dangerous to the foetus than ether. The continuous nitrous oxid-oxygen analgesia while less dangerous than the anaesthesia, should not be administered over long periods.

5. The marked fatty degeneration of the livers in all three of the young born after their mothers had only one hour of chloroform-oxygen anaesthesia shows that pure oxygen does not remove the danger of chloroform.

6. The changes following the use of nitrous oxid being identical with those seen after ordinary asphyxiation it seems fair to believe them due to long-continued interference with cell oxidation.

7. There is no reason for believing that the intermittent use of four or six inhalations of nitrous oxid-oxygen at the beginning of the uterine contractions can be of any material danger to the foetus. The nitrous oxid absorbed has been largely eliminated by the end of the contraction and normal metabolism is not disturbed during the interval.

8. Since it is evident that anaesthesia during pregnancy may be a source of considerable danger to the foetus, it is believed that operations should be avoided, if possible, during this period. The foetus in utero and the newborn would appear to stand ether anaesthesia better than chloroform or nitrous oxid-oxygen.

Since 1914, nitrous oxid-oxygen analgesia has been the analgesic of choice in all of my obstetrical work. Ether has been used in a few deliveries because gas was not available. I have not used chloroform since 1909. During this period, much of which I was working with Dr. Webster, the gas oxygen analgesia was combined with local anesthesia as the anesthetic of choice for cesarean sections. Cesareans had been performed under local anesthesia by Dr. Webster as early as 1910, but the gas oxygen analgesia added so much to the comfort of the patient by relieving the mental tension that it has been given in most cases since 1915. During the past ten years most of the cesarean sections performed at the Presbyterian Hospital have been with local anesthesia alone or combined with nitrous oxid-oxygen analgesia. Nitrous oxid-oxygen analgesia or anesthesia, rarely combined with a little ether has been used successfully in practically all types of dystocia. While the technic of administering the analgesia is the same as published in my previous reports, there are certain features in the management of the difficult case which are deemed worthy of further detail.

Between the many cases with no disproportion

between the fetal head and the mother's pelvis and those where there is an absolute disproportion there are a considerable number in which there is a relative disproportion. The first present no practical difficulties other than the loss of sleep and the inconvenience of never knowing when the case may deliver. The second are still easier since a cesarean section is one of the simplest of abdominal operations, being for a trained operator easier than the delivery of the so-called normal case. It is the border line case which taxes the skill of the obstetrician. Craniotomy is no longer performed on the normal living child. High forceps operations are only performed in exceptional cases, and no longer are the forceps applied to the floating head. Version is still used in pelves of the simple flat type, but is contraindicated in the generally contracted. Careful pelvimetry early in pregnancy will show the type of pelvis, but in the borderline case it is only one of the many points to be considered. A large fetal head may lead to an absolute disproportion, and on the other hand a small head may permit a spontaneous delivery when the pelvic measurements suggested the necessity of inducing premature labor or delivering by cesarean section. Much may depend on the entire management of the case.

Prior to the war I was experimenting with nitrous oxid-oxygen analgesia for forceps deliveries and since returning to civil practice the results with it have been so successful that I wish to publically recommend it. Formerly the patients were brought to the end of the obstetrical table or bed and the forceps applied with the patient in the Walcher position. As the head came to the perineum the thighs were flexed on the abdomen. But since last December I have used an inclined hip rest which gives a modified Walcher position without many of the disagreeable features of the former technic.

After the final cleansing before delivery the patient is placed on the inclined hip rest so that the perineum extends beyond the end. A sterile sheet is draped over the lower end of the bed and the patient's legs, being pressed down between the thighs so as to expose the vulva, yet remaining anterior to the anus. A second sterile sheet or towel is used to cover the abdomen. This posture and technic has been used very satisfactorily for not only normal deliveries but for version and extraction, high-mid, mid, and outlet forceps deliveries.

The axis-traction forceps are applied with a gas-oxygen anesthesia. As soon as the blades are locked the anesthetic is stopped and thereafter given intermittently with the uterine contractions. Traction is made on the forceps during the uterine contraction while the patient gives assistance by pulling on her straps and bearing down. The assistant may aid by making pressure on the fundus. The blades are loosened between contractions. The pressure from above reduces to a minimum the amount of pull which must be exerted on the baby's head and thereby lessens the operative risk to a minimum. In case the patient is a primipara or one who has a rigid perineum a primary posterior episiotomy is made, beginning in the midline and extending a little towards the left side.

The Walcher position increases to a slight extent the true conjugate of the pelvis and a moderate pull of the forceps when combined with the pressure from above will often permit an easy delivery of a head which has failed to descend after several hours of strong second stage contractions. One should never delay until the fetus is greatly endangered from the birth pressure. If in the uncontaminated case the head does not descend with moderate traction it is better to remove the forceps and deliver by cesarean section. It is assumed that in the borderline case no vaginal examination will be made during the trial labor.

While the Walcher position increases the true conjugate of the pelvic inlet and relaxes the perineum, it decreases to a slight degree the pelvic outlet. Therefore, if the outlet is small it becomes necessary to flex the thighs on the abdomen during the delivery of the head.

For version it is usually advisable to add a little ether to the nitrous oxid-oxygen mixture. Many prefer to do this during all normal deliveries, but after trying both methods I have limited the ether to the exceptional case. The expulsive efforts of the patient are of great value in the delivery of the aftercoming head, hence very little ether should be given during the version.

Coburn in a recent paper says: "The proof of the pudding is in the eating, is an adage to which most all will subscribe. That is the kind of proof the mothers and babies offer concerning nitrous oxide analgesia. Let me reiterate the salient points: Freedom from pain of any consequence, vitality conserved, no extra toxic burden on the already overburdened organs of elimination, period

of labor shortened, resistance unimpaired, more rapid convalescence, spontaneous respiration of the baby. This is not an *ideal* picture, it is a *real* picture. Is it, then, too much to claim that nitrous oxide analgesia is the greatest contribution to obstetrics that has been made in the present decade?"

Anesthesia and analgesia combined with aseptic methods have made it possible in our modern hospitals to treat satisfactorily, or relatively so, most of the cases of dystocia. Painstaking pelvimetry and pelvic examination early in pregnancy; rectal examinations during labor; conservation of nervous and physical vitality by means of properly chosen and administered analgesics; use of the Walcher position or at times the sitting posture; make it possible to give the borderline case a trial labor with but little increased danger of puerperal sepsis if cesarean section becomes necessary.

In the borderline case when the membranes rupture before the head engages, it is usually advisable to insert a moderately large Voorhees bag in the cervix to insure dilatation without the added danger of excessive birth pressure on the child. After the cervix is dilated the Walcher position with patient at the end of the table or on an inclined hip rest will often aid the head in its descent. The nitrous oxid-oxygen analgesia conserves the patient's energy and she can work harder, making the maximum expulsive effort with the minimum of exhaustion.

THE DOCTOR WHO WAS WILLING TO GO INTO SERVICE BUT COULD NOT LEAVE.*

BY J. M. DODD, M. D.,

ASHLAND.

The subject assigned me on the program presupposes the willingness of the doctor to go to the front but for reasons beyond his control unable to leave home. There are several reasons why a man could not get into active service and one was that when he had accepted a commission he was under orders and must serve where ordered even though that might be at home. If those in authority decided that he could best serve at home it was his duty to apply himself to such tasks as might be entrusted to him with the best of his ability in true soldierly fashion.

It was in this position the writer of this paper found himself during the war. Accepting a commission as lieutenant in the M. R. C. in June, 1916, and again a captaincy in October, 1917, assigned to the draft board and later to the medical advisory board and on requesting active duty at the front in October, 1918, he was told that he was serving the cause where he was better than in any other place he could be put.

It was the greatest disappointment of his life that he did not see active service for which he felt that his thirty years of experience as an emergency surgeon fitted him.

Though in the humbler place of the man who served at home his was nevertheless a work that had to be done and was no insignificant part of the great work done by the medical profession in and for the army and for the civilian population.

As the clouds of the great conflict clear away we naturally reflect on the various agencies which contributed to the final issue, and my theme in this discussion is the role of the doctor who stayed at home.

Ask any group of patriotic people, "What did you do to help win the war?" and they properly answer, "All we could." This is true of the medical profession of the country almost without exception.

When mobilization of the medical resources of the country was begun to provide the rapidly growing army with adequate medical service, our profession responded with an intense patriotic zeal that will ever be a source of pride and satisfaction to all loyal participants and the makers and students of medical history.

If men were slow about volunteering their services in the medical corps, it was only for want of information as to what would be expected of them after accepting their commissions. Doctors sought information from all possible sources that would enable them to decide in what way they could best serve their country with the talent they possessed.

In the early periods of the war this information was hard to get.

It was hard for men to give up work for which they had prepared themselves and in which they had proven themselves proficient and take chances on being given work for which they had neither fitness nor liking.

Some real or imaginary discrepancies in the conferring of initiatory rank made some hesitate about accepting commissions and in a few instances commissions were refused because they did not seem to correspond in rank to the relative position of the doctor in his profession or com-

*Read before the State Medical Society of Wisconsin, Milwaukee, Oct. 2d, 1919.

munity. Doctors hesitated to hurl themselves into the great war machine to be ground out army doctors, having no assurance how they would emerge from the great sorting process.

Some felt that they were equal to almost an unlimited amount of work if they could do it along the same lines and under the same conditions as they worked in their respective fields at home.

Others knew their own shortcomings and feared the result of unequal competition, and yet there were very few of these men who would not have given all their earthly possessions, and even their lives if need be, to triumph over the world's worst enemy, which at times during the conflict seemed perilously near the attainment of his objective.

As time went on and all realized more and more the real significance of the war game, those who could enlisted in the medical corps and those who were disqualified for any reason took up such home service as was available and all worked in a common cause.

The doctor who served at home saw at close range the effects and stern realities of war—had to help build up the army and serve in innumerable ways more important than that performed at the front, and yet received none of the plaudits heaped upon the returning soldier by a grateful and admiring people.

The doctor must serve on the draft board and conduct that part of the examination which would determine physical and mental fitness for the life of the soldier, and, figuratively speaking, keep the weak timber out of the ship.

He served on the draft board—the medical advisory board—the district board, and as a recruiting officer for the Medical Corps. In all these he must be instructor and advisor. His advice was continuously sought by and freely given to the drafted men and their families and relatives.

The families of absent soldiers were his charge, that the absent one might have some grains of comfort in the thought that those dependent upon him at home were being cared for with true paternal interest. He saw to it that the interests of the absent doctor were safeguarded that when he returned he might resume his civilian practice with as little loss as possible.

He gave attention to the increase of hospital facilities that the sick might be better provided for and that the soldiers coming home with wounds and disease might find the very best service awaiting them.

He gave attention to the communities depleted of their medical men and whenever possible secured for them adequate medical service and redoubled his efforts when the dread flu epidemic came with a terror that exceeded that of war.

If he were a doctor who had retired from active practice, he again took up the work so as to serve.

If he were a specialist, he increased the range of his activities so as to be of the greatest possible service.

He gave his services without pay to every man in uniform and impressed every soldier with the fact that it was a pleasure to serve him while he was serving his country.

The Red Cross, the United War Charities, and every other activity tending toward war relief, received the active and loyal support of the doctor who stayed at home.

As all the doctors who saw active service at the front did not return unscathed, neither did the doctors who stayed at home escape untouched by the unseen enemies with which they were at war, as is attested by the long list of victims of pneumonia and other conditions incident to the flu epidemic.

It takes real courage to fight an unseen foe, the tangible evidence of whose presence is only manifest by his casualties.

The war demonstrated one thing beyond all doubt—that personal courage has not waned with the progress of civilization. This was proven by the utter disregard of personal safety and the reckless defiance of death through innumerable instances during the war, and the members of the medical and allied professions proved that they lacked none of the sublime attributes of courage.

In the air, on and under the earth, on the sea and beneath its surface, the deeds of men surpassed the fables of old and all the ages past looked down and wondered if they had ever seen brave men before.

Much is known of the doings of men and women, both at home and at the front, and much more will never be known unless in some way the recording angel will reveal to future intelligence the deeds of men who did their duty though in obscurity.

When this time comes, the doctor who served at home will stand with Abou Ben Adhem as one who served as well as loved his fellow man.

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EDITORIALS

YOUR degree and your membership in this organization bring with it a responsibility in medical affairs, and that responsibility begins with your County Society. You owe it your loyalty, your support and your regular attendance.

—Secretary's Report.

THE SEVENTY-FIFTH ANNUAL MEETING.

THE annual meeting of the State Medical Society in 1921 will mark the seventy-fifth birthday of the organization. It was planned at the La Crosse meeting to make this an occasion. It is only fitting that it be celebrated with a birthday party which will do honor to a society which has accomplished so much for the State of Wisconsin in three-fourths of a century of usefulness.

Preparations for the event will be begun immediately and suggestions are asked from all of our members. It is planned to make the meeting a big "home-coming" and all Wisconsin men, those who have practiced here and have moved away to other states, and those who have been born and raised in Wisconsin but have practiced elsewhere, will be invited to return for the meeting. The program is assured, for no state can boast of more eminent men in the profession.

PROHIBITION AND THE MEDICAL PROFESSION.

ANY self-respecting physician these days can scarcely attend a social gathering, read his paper, or meet his friends on the street without encountering the joke (?) or gibe about "writing a prescription." On the whole, the profession is as usual above reproach, but the inexcusable wholesale prescribing of whiskey by certain men in some communities has done more to bring the profession into disrepute than any other single thing in a century.

We believe few members of this Society forget they are members of a profession the nature of whose calling gives them certain privileges not accorded other citizens, but privileges which assume they are of a class who have never abused the confidence placed in them and who stand above all others in law enforcement.

With these privileges go responsibilities and obligations, and they were granted under the laws enforcing the eighteenth amendment to the Constitution of the United States with the assumption that they would be used honorably. Few physicians will be willing to barter off an honorable name for such a title as "bootlegger." That the public may know the stand taken by the organized medical profession of the State, the following resolutions were passed by the House of Delegates of the State Medical Society of Wisconsin at its annual meeting in September.

"Whereas, the practice of indiscriminate prescribing of liquor by some members of the medical profession on the mere request therefor, and without regard of the need of the individual, is bringing our profession into disrepute, and

"Whereas, the State Medical Society of Wisconsin as a body desires to affirm its wish that all its members shall render strict obedience to the laws, whatsoever they may be,

"THEREFORE, BE IT RESOLVED, that the State Medical Society of Wisconsin as a body condemns all and every effort on the part of the medical profession to take unfair advantage of the privileges to the physician under the law by indiscriminate granting of prescriptions for the purchase of alcoholic stimulants."

INCREASE IN DUES.

THE "High Cost of Living" has at last struck the State Medical Society. Until the present year, the activities of the organization have been financed by the collection of four dollars each year from each member. Of this amount, two dollars went into a general fund to take care of the publication of the Journal and all other expenses of the Society with the exception of the legal defense of members involved in malpractice suits. Two dollars of the four dollars collected went into the medical defense fund and was used solely for this purpose.

All of the activities of the Society depend on publicity through printed matter and the increase in the cost of labor, paper and other materials has brought our necessary expenditures far above the amount received by a collection of two dollars per member as annual dues. The following is quoted from the report of the Managing Editor of the Journal to the House of Delegates at the La Crosse meeting in September:

"From the above comparison it is seen that the gross earnings during the period from Aug. 1, 1919, to Aug. 1, 1920, exceeded those of the preceding year by $595.17, practically all of which is creditable to the advertising pages.

"That the expense for publishing the Journal during the current year exceeded that of the preceding year by $1,493.22, which is explained as follows:

"On March 10, 1920, there was an advance of 50% in printing (making a total of 70% advance in this item during a period of 14 months) which advance increased our printing bill for the last five months approximately $1,100.00.

"There were forwarded to members 1,030 more copies during the period covered by this report than during the period covered by the preceding report at an average cost of 18 cents per copy. This item accounts for $185.40 of the increase.

"It became necessary to purchase additional office supplies (particularly a steel filing cabinet $75.00) which, with increased cost of all necessary office supplies, advanced these items over similar items for the preceding year by $177.20, which with the increased cost of postage and miscellaneous expense accounts not directly comparable explains the balance of increased cost of publishing the Journal amounting to $30.62, and finally;

"That the above data explains the increased cost per copy during the last year approximately 3 2-3 cents.

"The greater part of the advance in the printer's quotations, at least, was reasonable owing to the ever increasing cost of print paper and the increasing demands of labor.

"As shown above, the total increase in publishing the Journal during the last year over the preceding year was $1,493.22, and that the 50% increase in the item of printing was in effect during only five of the twelve months' period.

"It is estimated that were the 50% increase in force during all of the twelve months' period, as it will be during the coming twelve months, unless the price of print paper and the cost of labor be reduced, the expense of printing will be increased by 7-12, or approximately $1,540.00 during the ensuing year, making a total annual increase in the cost of printing over the amount required for this item previous to March 1, 1920, the date of the recent advance of 50%, approximately $2,640.00, and further;

"That the increase in the items of mailing, office supplies, clerical services and miscellaneous general expense will amount to approximately $360.00, making the total estimated increase in the cost of publishing the Journal for the ensuing year $3,000.00, which, divided among a membership of 2,100 will require an increased revenue for the Journal of about $1.43 from each member."

The situation brought to the attention of the House required either the suspension of the publication of our Journal and a curtailing of the other activities of the Society, or an increase in dues. The House of Delegates has unanimously voted to increase the dues for the year 1921 from four to six dollars. Of this amount, two dollars will, as usual, be credited to the medical defense fund and the balance to the general fund.

Such an increase in dues compares favorably with other increases in the cost of living and our members should have no valid objection to it. Compared with the annual dues of many other state societies which range from ten to twenty-five dollars or with membership costs even in trade unions, it is certainly but a small expenditure.

The medical defense feature alone costs four times the amount in any insurance company, not counting the benefits of membership in the County, State and National associations covered by the dues, the year's subscription to the Journal and the consciousness of having borne one's part in the many necessary activities of the association.

It is hoped few members will make objection to this necessary added expense and that the membership report at the seventy-fifth annual meeting next year may reach the two-thousand mark.

THE JOURNAL CLINIC

Edited and Published by
THE BUREAU OF POST GRADUATE MEDICAL INSTRUCTION
UNIVERSITY EXTENSION DIVISION
The University of Wisconsin.

ANATOMICAL MODELS.

The Extension Division of the University, through its Bureau of Postgraduate Medical Instruction and Bureau of Visual Instruction, is prepared to lend for study, teaching, lectures, or public health exhibits, any of the following sets of anatomical models, films or slides.

There has been an ever increasing demand for visual instruction appliances. In no field of study have such appliances been more necessary than in the study of human anatomy. That this cannot be mastered from the textbooks is a truism of the clinic and classroom. The models available through this Department will be especially helpful to lecturers on medical and public health subjects, training schools for nurses, courses in home care of the sick, normal and high schools.

They are lent for the above purposes under the following conditions:

1. Models must be returned at end of the period for which they are scheduled, unless an extension of time is granted.

2. The student, teacher, or school assumes full responsibility for the return of the model in as good order as received.

3. Transportation charges must be paid each way.

LIST OF MODELS.

8347—NATURAL EYE. Sagittal section. Mounted.

8345—MYER'S MECHANICAL MODEL OF THE EYE. To illustrate the action of the lens in accommodation.

YBS—2—THE EYE.

A greatly enlarged model of the right eyeball. The upper half lifts off, exposing the vitreous body. It is hollowed in front to receive the crystalline lens. The vitreous body and lens are removable, as is also the concavo-convex cornea with the blue iris. These two membranes occupy the extreme front part of the anterior segment of the eyeball. The inner surface of the removable upper portion shows a section of the retina with its various layers greatly magnified. Nearly in the middle of the posterior surface the optic nerve with its central artery is shown as it enters the interior of the eye. The terminations of the six muscles which move the eyeball are clearly shown in the external view.

H4A—SECTION THROUGH THE ORBIT.

Nerves are shown. Corpus vitreum, lens crystallina, and cornea are made of transparent celluloid.

X—THE NASAL CAVITY AND PARANASAL SINUSES.

A cast showing all details in correct anatomical relation, greatly facilitating the study of the complicated system of these sinuses. The nasal cavity, frontal sinuses and nasofrontal ducts, the lacrimal sac and nasolacrimal ducts, maxillary sinuses, anterior ethmoidal cells, middle ethmoidal cells, posterior ethmoidal cells, and sphenoidal sinuses are all shown in different colors.

B7—THE EAR.

Model showing cavities opened, seven times enlarged, with transparent tympanum. Mounted on stand—dismountable.

YBS—3—THE EAR.

Model of left ear, greatly enlarged. It is composed of three parts: the external, the middle, and the internal ear. Dissectible into parts, showing the membrana tympani, the ossicles of the tympanum, the labyrinth, and the half opened cochlea.

YBS—10—THE ORGANS OF SPEECH.

10A—Anterior view of the larynx, its connection above with the hyoidean bone, and below with the windpipe. Partially covered in front by the thyroid gland; shows connecting ligaments.

10B—Posterior view, showing connection with the hyoidean bone and the trachea. The cartilages are mostly uncovered, the mucous membrane being retained only on the epiglottis and in the interior of the larynx.

10C—Presents another posterior view. In this view the dissection lays the larynx open showing the tongue, hyoidean bone, trachea, and pharynx, with connecting ligaments. All these parts are shown with their mucous membrane covering.

YBS—14—THE LARYNX PHANTOM.

A mask of the face with open mouth. The

throat or larynx is shown as a trilateral, cartilaginous capsule. The posterior wall of the pharynx is removable, exposing the cavities of the nose, mouth, and throat.

YBS—5—The Teeth.

This model is of the left lower jaw, and is greatly enlarged. The anterior portion of the left maxillary bone is removed to show the development and structure of the teeth.

YBS—6—The Human Brain.

6A—Upper portion.

6B—Lower portion (basis of cerebral nerves).

6C—Perpendicular section along the median line.

6D—Transverse section, showing the cavities.

YBS—13—The Brain *(with part of skull).*

This model shows parts of the cranium removed. The brain can be taken out and divided into three pieces, giving both an internal and an external view.

YBS—7—The Head.

7A—The left half of the head and upper part of the neck, showing muscles, blood vessels, and nerves.

7B—In this model the skull and orbicular cavities are opened, exposing maxilla and mandible cerebral and other internal anatomy.

7C—Shows the general anatomy of the brain, cavities of the mouth and nose. Dissection along median line gives excellent view of anatomy of pharynx and larynx.

R1—Head and Thorax — Median Section through the Head and Thorax.

Model cast from a body dissected by Professor Ruedinger. The relation of the organs of head, neck, and thorax and their accurate size and connections are represented. The valves of the heart, ventricles and auricles, are shown.

YBS—1—The Heart.

This model is greatly enlarged and opens in front, showing the great blood vessels that carry the blood to and from the heart, the Superior and Inferior Venae Cavae, the Pulmonary Artery, and the Aorta. The anterior wall may be removed, exposing the four cavities of the heart, and their openings and valves.

H1—The Heart.

A model by Professor Ruedinger. It is greatly enlarged, all details are shown in correct anatomical relation, and it is dissectible in a very convenient manner. Mounted on a stand.

B3—Mediastinal Organs—Complete.

A splendid cast made under the supervision of Professor Brodersen.

YBS—8—The Lungs and the Heart.

8A—An anterior view of the lungs with the heart exposed, showing the pericardium in its natural color and veining. The left lung is partially cut away to show the bronchial ramifications.

8B—Posterior view of the lungs with the heart. The right lung is partially cut away to give a plain view of the bronchial ramifications, and the arteries and veins of the lung. A few funnel-shaped lobuli composed of air cells magnified 25 times are shown.

YBS—9—Organs of Respiration.

In this model great care has been taken to present clearly the anatomy of the chest organs—air passages, lungs, and heart. Both the anterior half of either lung and the heart may be removed, showing the ramifications of the windpipe within the lungs and the connection of the pulmonary blood vessels with the heart. Specially prepared representations of the air cells, greatly enlarged, are shown.

YBS—12—The Trunk.

This torso is that of a youth. The visceral, pulmonary and abdominal cavities are laid open. The lungs and heart, and the abdominal organs are removable.

YBS—4—The Skin.

This transverse section model presents a view of all the component parts of the skin, and these parts are magnified 480 times. Some, however, such as tactile bodies, papillae, hair follicles, and sebaceous glands, are taken from different parts of the skin, and are thus placed nearer to each other than they are in the skin itself.

YBS—11—Joints.

11A—Shoulder joint.
11B—Elbow joint.
11C—Elbow joint.
11D—Wrist joint.
11E—Hip joint.
11F—Knee joint.
11G—Ankle joint.

ANATOMICAL CHARTS.

The American Life-Size Anatomical Charts as edited, revised, and augmented by Max Brödel, Professor of Medical Drawing, Johns Hopkins Medical School combine several new and especially desirable features. Most important, probably, is their life-size, or larger. illustrations, permitting a wealth of detail which would be confusing if not entirely lost in figures or charts of smaller dimensions. A single figure possesses the advantage of showing all of the structures of a given area which a student would find by actual dissection of the part. It is not necessary, for example, to omit smaller branches of arteries or of nerves for the sake of clearness, as the large size of the charts, as well as the slight exaggeration of natural coloration, brings out all structures with striking clearness.

The set comprises seventeen life-size or larger figures (seven greatly magnified). The brief descriptions of the individual figures, which are printed on the succeeding pages of this bulletin, are sufficient to show that the charts are not lacking in any important details —that they are essentially complete. For this reason they are of great service not only to the medical student, the teacher of anatomy, and the nurses' training classes, but also to the physician or surgeon who requires a convenient and rapid means of refreshing his memory of particular details of structure.

CHART NO. 1.

1a—Human skeleton, front view.
1b—Human skeleton, back view.

The two views of the skeleton are so arranged that they show practically every bone of the skeleton with admirable clearness and accuracy in details. On one side of each figure the ligaments and interosseous membranes are shown, which is a valuable feature in illustrating the articulation of the skeleton.

CHART NO. 2.

2a—The muscles, front view.
2b—The muscles, back view.

As in Chart No. 1, the arrangement of the two figures in this chart is such that practically all of the skeletal muscles are shown to good advantage, the origins and insertions in many cases being brought out with exceptional clearness. The figures are accurate in detail, beautiful, and life size.

CHART NO. 3.

3a—The nervous system. The distribution of the cranial nerves, the cervical, brachial, and lumbosacral plexuses is shown in detail, as well as the other parts of the peripheral nervous system, not excepting the cervical, theoracico-lumbar, and sacral parts of the sympathetic system.

3b—Circulatory system. This chart does for the arteries and veins what Chart 3a does for the nerves. All branches of any significance are shown, and relations to the bones of the skeleton are plainly indicated.

CHART NO. 4.

4a—Schematic diagram of the circulation showing the relations of the systemic, pulmonic, and portal systems to each other and to the heart.

4b—The heart and principal blood vessels, greatly magnified. The essential details of structure of the heart are shown in four figures. The heart valves are especially well shown.

4c—The skin, greatly magnified. Two figures show the complex structure of the skin and subcutaneous tissue, in greatly magnified sections.

CHART NO. 5.

5a—The ear, greatly magnified. Figure No. 1 shows a coronal (frontal) section through external auditory meatus, continued obliquely in a lateral and dorsal direction.

Figure No. 2 gives an enlarged and clearer view of the membranous labyrinth, etc.

5b—The eye, greatly magnified. A horizontal section through meridian of the left eye is shown in Figure No. 1.

Figures 2 and 3 show equatorial sections.

CHART NO. 6.

6a, 6b, 6c, and 6d of this chart show successive stages in the dissection of the thoracic and abdominal viscera. By the process of elimination practically a complete dissection of the thoracic and abdominal cavities is illustrated by the four figures. Relations are accurately preserved throughout.

CHART NO. 7.

7a—Section through head, greatly magnified. Shows the structures seen in a median sagittal section of the brain, the relations of the brain and cord to the exterior, the configuration of the nasal and buccal cavities, the nasal conchae, the pharynx, larynx, etc.

7b—Teeth, greatly magnified. Several interesting and instructive figures show the structure, the nerve and blood supply of the teeth, and the process of dental decay.

MOTION PICTURE FILMS ON HEALTH AND MEDICAL SUBJECTS.

Outlines or "Assemblies" of Films.

As the titles of films often fail to convey a clear notion of their contents, the bureau has prepared and stenciled a synopsis or "assembly" of each of the following subjects, this outline usually consisting of the various captions that run through the reel.

Borrowers are advised to procure in advance the outlines of subjects which interest them. This will insure a more intelligent selection of films.

A reel is 1,000 ft. in length, and requires 15 to 20 minutes to run.

I. General Sanitation and Health and Child Welfare

1. Milk—Nature's Perfect Food..... 1 reel
2. Public and Private Care of Infants..... 1 reel
3. Summer Babies ..... ⅔ reel
4. The Most Perfect Child
   A Square Deal for the Baby..... 1 reel
   Baby Day
5. The Man Who Learned (Clean Milk)... 1 reel
6. Disease Prevention Day in Chicago..... ½ reel
7. A Daily Dozen Set Up (Physical Training) ..... 1 reel
8. Physical Culture ..... 3 reels
9. Come Clean (Oral Hygiene)..... 3 reels
10. Red Cross Seal Story (Tuberculosis)... 1 reel
11. The Awakening of John Bond (Tuberculosis) ..... 1 reel
12. The Wedding Bell (Typhoid Fever).... 1 reel
13. In His Father's Footsteps (Farm Sanitation) ..... 1 reel
14. If Your Soldier's Hit..... 2 reels
15. The Hospital Train..... 1 reel
16. The Field Hospital Company..... 1 reel
17. Fighting the Cootie..... 3 reels
18. The House Fly..... 1 reel
19. Simple First Aid Hints..... 1 reel
20. Fighting the Fly..... 1 reel
21. Mosquito Eradication ..... 2 reels
22. Our Children (Weighing, Proper Feeding, etc.) ..... 2 reels
23. The Milky Way (Milk as a Food)..... 1 reel

24. Through Life's Windows (Care of the Eye) ..... 1 reel
25. The Milk Industry (Clean Milk)..... 1 reel
26. The Street Beautiful (Clean Up)..... 1 reel
27. From Grass to Glass (Clean Milk)..... 1 reel
28. Sheffield Farms (Clean Milk)..... 1 reel

II. Reconstruction and Re-Education of Maimed Soldiers and Sailors

29. The Way Out (Re-education of the Maimed and Crippled)..... 4 reels
30. Reconstruction of Disabled Soldiers and Sailors ..... 2 reels
31. Rebuilding Broken Lives..... 1 reel
32. Re-education of the Blind..... 1 reel
33. The Re-education of the War Blind in France ..... 1 reel
34. Reconstruction (Prepared by Major Baldwin) ..... 2 reels
35. Reconstruction (Prepared by Colonel Purnell, Fort McHenry)..... 2 reels
36. Reconstruction (Prepared by Colonel Mock) ..... 3 reels
* 37. Reconstruction (Prepared by Colonel Hawley) ..... 4 reels

III. Venereal Diseases

38. Venereal Diseases (Animated Drawings) 2 reels
39. Anti-Vice ..... 1 reel
40. Fit to Fight (To use in lectures to men) ..... 4 reels
41. The End of the Road (To use in lectures to women)..... 6 reels
42. Fit to Win (Similar to Fit to Fight, but revised for civilian use)..... 6 reels

IV. More Technical Subjects

43. Splints for Transport..... 2 reels
44. The Pilon ..... 1 reel
45. Treatment of Burns..... 2 reels
46. Disabilities of a Soldier's Foot and Their Treatment ..... 5 reels
47. The Soldier's Foot and Military Shoe.. 4 reels
48. Antitoxins, Serums, and Vaccines..... 4 reels
49. The Hookworm .....½ reel
50. Circulation of the Blood..... ½ reel
51. Parasites of the Frog..... ½ reel
52. How to use Dakin Tubes, also showing operation by Dr. Carroll at French Base Hospital ..... 1 reel
53. Electrical Appliances for Massage..... 1 reel
54. Tying Surgical Knot; New Method.... ½ reel
55. Human Movements Analyzed..... ½ reel
56. Tests of Gilbreth Clock..... ½ reel
57. X-Ray of the Stomach..... ½ reel
58. Proper Methods of Making Blood Culture 1 reel
59. Treatment of Varicocele..... 1 reel
60. Operation for Hernia..... 1 reel
61. X-Ray of Mouth, Hand, and Leg..... ½ reel
62. New Method Ice Pack..... ½ reel
63. Femoral Hernia (Animated Drawings).. 1 reel
64. Tendon Transplantation (Flat Foot).... 3 reels
65. Tendon Transplantation (Club Foot)... 3 reels
66. Empyema ..... 1 reel
67. Bone Grafting ..... 3 reels
68. Improved Method of Preparing and Administering Carrol-Dakin Solution..... 1 reel
69. Colonel Dircle ..... ½ reel
70. Empyema (Colonel Bordley)..... 2 reels
71. Division of Life Cells..... ½ reel
72. Albee's Bone Grafting (Operative Procedure and Animated Drawings)..... 2 reels
73. St. Elizabeth Hospital Activities..... ½ reel
74. The Diagnosis of Tuberculosis..... 3 reels
75. How Life Begins (Fertilization of egg in 12 or 15 plant and animal forms, and embryonic stages) ..... 3 reels

LANTERN SLIDES ON HEALTH AND MEDICAL SUBJECTS.

Detailed list of the slides in each subject can be had on request. Those sets starred (*) have printed readings or outlines to accompany them. Borrowers are advised always to get the printed material well in advance, thus to make proper preparation for the use of the slides.

I. Anatomy

1. Human Anatomy .....100 slides
2. Anatomy (Slides corresponding to charts listed on page 8)..... 8 slides

II. Sanitation and Health

3. *Home and Community Sanitation.... 70 slides
4. *Clean Milk ..... 52 slides
5. Infant Welfare (Descriptions on slides) 50 slides
6. *The Outdoor School..... 45 slides
7. Health Exhibits .....100 slides
8. Milk ..... 84 slides
9. *Trap the Fly..... 60 slides
10. *Child Labor ..... 58 slides
11. *Children and Children's Diseases..... 65 slides
12. *Rural School Improvement in Wisconsin ..... 94 slides
13. Food Values ..... 50 slides

III. Recreations

14. *Recreations, Plays, and Games..... 60 slides
15. Vacant Lot Playgrounds..... 50 slides
16. Schoolyard Playgrounds ..... 50 slides
17. Park Playgrounds ..... 50 slides
18. Roof Playgrounds ..... 50 slides
19. Camps and Outings..... 50 slides
20. Rural Recreation ..... 50 slides
21. Baths and Wading Pools..... 50 slides
22. Athletics ..... 50 slides
23. Playgrounds and Recreation Centers—5 sets, each..... 50 slides

IV. Diseases

24. Parasites and Microorganisms.....140 slides
25. Tuberculosis .....100 slides
26. Typhoid Fever .....150 slides
27. Malaria .....100 slides
28. Pyorrhea ..... 14 slides
29. Venereal Diseases (General)..... 48 slides
30. Keeping Fit (Venereal Diseases)..... 50 slides
31. Gonorrhea ..... 52 slides
32. Syphilis ..... 50 slides
33. Care and Training of the Feeble-minded ..... 82 slides

V. The Eye—Its Diseases and Care

34. Ophthalmia ..... 70 slides
35. Training of Midwives..... 23 slides
36. The Eye as Affected by Wood Alcohol 19 slides
37. Trachoma ..... 83 slides
38. Accidents to the Eye..... 76 slides
39. Illumination ..... 51 slides
40. Care of the Eye at School..... 47 slides
41. The Blind ..... 22 slides
42. General Defects of the Eye..... 51 slides
43. *Technical Subjects .....131 slides

CLINIC OF DR. L. M. WARFIELD AT MILWAUKEE COUNTY HOSPITAL.

A recent case of scurvy which had been diagnosed tuberculosis of the knee joint led me to get together the histories of scurvy which have been in the hospital since 1912. Dr. Murphy of the intern staff has examined the records and has found four other cases. The abstracts of these five histories are as follows:

CASE I. On June 19, 1912, a white man, aged 52 years, entered hospital with complaints of pain in the back, constipation, pain and swelling in the right knee and sore mouth. The entrance diagnosis was "Rheumatism". He was a common laborer and had always been well. He was a moderate whiskey and beer drinker. He denied venereal infection. Through the social service worker we found that he, with a group of foreigners, lived in a filthy, damp, poorly ventilated room. His meals were of a monotonous sameness. Coffee, bread, potatoes, Wiener sausages. He ate no butter, no green vegetables, occasionally he ate an egg.

He dated his present illness five days before entrance when he noticed severe pain in the right knee accompanied by swelling and discoloration. The pain was worse on movement and went up to his hip and abdomen. He noticed also that the whole right thigh was bluish black in color.

On examination he was a fair-sized man with evident loss of weight. The tongue was covered with a white fur, the breath was very foul, the gums were swollen, purplish, soft and bled easily.

Heart and lungs revealed no abnormalities. The abdomen was slightly distended and the walls were held tensely but nothing was found. The arms were normal. The right leg was slightly flexed at the knee, stiff, could not be extended. From the right popliteal space to the middle of the thigh was a large bluish purple discoloration. There were a few scattered, smaller similar colored spots on the inner side of left knee. The intern wrote "evidently a rheumatic purpura as he had rheumatism recently."

The urine was normal. There was no fever. Blood count showed Hb. 45%, R. B. C. 2,456,000, W. B. C. 4,000. Differential count showed polys. 50%; small lymph. 37%; large lymph. 10%; transitionals 3%.

As soon as he was seen by me he was put on lemon juice, onions, vegetables and a varied diet. He began at once to improve and by July 29 he was able to leave hospital practically well. There was still a light yellowish tinge to the skin of the right thigh.

CASE II. On April 4, 1915, a white man, age 39, a foreigner, married, moulder by occupation, entered hospital with complaint of pain and swelling in both legs up to knee, and sore mouth. The diagnosis of "Blood Dyscrasia" (whatever that means) was on the entrance sheet. For the past six years he had had stomach trouble and a poor appetite. There was pain followed by vomiting which relieved the pain. He had this for two years off and on but for the past three years has had no attacks. He was a moderate drinker and heavy worker. Occasionally his ankles have been swollen.

About the last of December, 1914, his left ankle began to pain him and soon the right ankle pained. He noticed swelling of the right leg between knee and ankle. There were bluish black spots over both legs varying in size from pin head to three inches in diameter. The pain in legs was made worse by walking. He had lost about six pounds in the past month. There was no note of his usual diet.

On examination the breath was fetid, the tongue was clean, the teeth were poor and the gums were bluish-red, swollen and bled easily. The arms were normal. Over both lower extremities there were petechial hemorrhages, a bluish discoloration over middle of lower legs which extended half way up the left thigh. There was edema around left ankle and bluish discoloration of the skin. Examination of rest of body revealed nothing of note. Blood pressure was 132-86. Blood count Hb. ?, R. B. C. 2,800,000, W. B. C. 5,000. Differential count, polys. 34%; lymph. (large and small) 58%; trans. 8%; eosin. 0.4%; baso. 0.2%. Sputum and feces showed nothing important. The urine was negative, the temperature normal.

He was put on orange juice and a varied diet with green vegetables. Within a few days there was marked improvement. He was kept in hospital until June 8, 1915, and discharged well.

CASE III. On March 25, 1919, a Pole aged 40, tanner, who worked in a damp place all day, entered hospital for observation. Very little history was obtainable. He said his legs were injured four weeks previously (this doubted.) His legs have become weak and painful and his thighs became discolored. Otherwise he has no complaint. He was very anemic and thin. His mouth was foul with soft, bluish, swollen gums and rotten teeth. The arms were normal. The entire left leg except the anterior surface of thigh was a variegated color, blue, green, brownish, yellowish. It looked as if he had been beaten up. The skin was tense and the tissues were hard. The posterior surface of the right thigh had a similar appearance.

Laboratory findings were negative, there was no fever.

He was put on orange juice, fresh vegetables and meat. By April 9th there was very little discoloration of the skin of the thighs. The gums were improved. He was discharged well April 17th.

CASE IV. On April 3, 1919, a white man, aged 42, a laborer, married, entered hospital complaining of "Rheumatism", swelling of right leg and pain in both legs. He was a heavy drinker, whiskey before breakfast, bolted his food and suffered much with belching. He chewed tobacco to excess. (No note as to diet.)

About four weeks previous to admission he noticed small brown spots on both legs and sharp pains in legs. Shortly after, the right leg began to swell between ankle and knee. The swelling and pain increased until he had to stop work two weeks previously. Nothing helped the pain and swelling. One week before entrance the skin

turned brownish and became tight and glossy. He was treated at his home for "Rheumatism."

Examination showed a thin man with poor teeth, foul mouth, swollen and spongy gums. The arms were negative. Over both legs were spots of dark brown color varying in size from .1 to 3 c.m. which extended up to the trunk on both sides. The right leg was swollen between the knee and ankle, there was no pain on deep pressure.

Except for anemia, all laboratory findings were negative. He was diagnosed scurvy and presumably put on the usual diet. (The notes are singularly incomplete.) He improved sufficiently to leave hospital April 19, 1919.

Case V. On July 19, 1920, a white man, clerk, aged 42, entered the hospital a second time complaining of sharp, stinging pain on inner side of right lower leg. Pain was continuous and bothered him only when standing on his feet. In 1918 he was in the hospital with a swollen and painful knee. He was diagnosed by the intern, tuberculosis. (Evidently no one but the intern saw him.) There was nothing else of importance in his past history except that he ate a monotonous diet with no vegetables except potatoes and no fruit. About July 1st he noticed pain in the right knee on standing. The pain gradually became worse and his knee began to swell. On July 9th he saw a doctor who diagnosed tuberculosis of the knee. He took to bed on July 12th. He was weak but had a fair appetite. There were no other complaints.

On examination he was a thin man with a foul mouth, dirty, blackened teeth and swollen gums which were soft and bled easily.

The legs only showed abnormalities.

The right knee was swollen, there was fluctuation in the joint. It measured 33 c.m. Left knee 30 c.m. The right leg was bluish black from the knee to the ankle, more marked on inner side. Right knee held fixed in slightly flexed position. There was no edema of legs but swelling around right knee. Left leg was apparently normal except for slight amount of bluish brown discoloration on medial side of left calf.

Except for a slight anemia all laboratory examinations were normal. The differential count showed polys. 70%; small and large lymph. 24%; trans. 5%; bas. 1%. He was put on antiscorbutic diet and given a tooth brush. He rapidly improved and left hospital well Aug. 10, 1920.

DISCUSSION.

As will be seen by these few records diagnoses of "rheumatism," "blood dyscrasia" and "tuberculosis" were made. Rheumatism seems such a satisfying diagnosis to the layman that it often suffices and the physician is further pushed into inaccuracies of thought.

Years ago in the period of sailing vessels, scurvy was a very real menace. Captains of vessels on long voyages always expected some cases among the crew. Lime juice was frequently included in the food supplies.

The symptoms are distinctive and the hemorrhages into the subcutaneous tissues are characteristic. There are frequently aching pains in the joints. The joints may be swollen and the synovial membrane may be filled with blood. There are weakness and anemia. The teeth are loose, the gums are swollen and so spongy that they bleed easily. Chewing is painful. The breath is foul. There is no fever. The blood picture is that of a secondary anemia. In the differential count the lymphocytes are often increased.

The most striking feature of the cases we have seen has been the subcutaneous hemorrhages. They are found only on the lower extremities and may extend from feet to buttocks. When extensive the legs present a remarkable appearance. The skin is tense, glossy, the tissues are brawny and there is every color from deep purple to light green, including red, blue, brown, orange, etc. Every pigment formed by the transition from hemoglobin to colorless protein is found. The legs appear as if the man had been set upon and beaten with a club.

What causes the disease? We do not absolutely know. We do know that there are substances of an, as yet, undeterminable nature which are not food-stuffs, which have no nutritive value, which are contained in various plant and animal products in variable quantities and which are absolutely essential to growth and normal development. These substances have been called vitamines.

Certain so-called deficiency diseases are caused by a lack of these substances in the diet. There are at present three which are surely known (a) the anti beri-beri vitamine known as water-soluble "B"; (b) the antirachitic vitamine, called fat soluble "A", and (c) the antiscorbutic vitamine, possibly also water soluble "B".

There may be others.

Scurvy, then, is one of the deficiency diseases. It is caused by the absence of something which is found in fruit juices, green vegetables, fresh meat and to less extent in milk. It might be asked, why then did a man whose diet was meat and potatoes develop scurvy? The answer is to be found in the fact that potatoes contain but little of the antiscorbutic vitamine and the meat eaten was a sausage made from parts of the carcass not salable on the market, but bought by foreigners be-

cause of its cheapness. A day after day, week after week diet of the same food. One man ate in cheap restaurants on the same diet day after day. He ate no green vegetables, no fruit. He had two attacks. From the first he recovered on the ordinary hospital diet which is varied and contains green vegetables. From the other he also made a prompt recovery under real antiscorbutic diet.

The diagnosis is usually easily made although there are certain pitfalls to be avoided. Spongy, bleeding gums and purpuric spots on the legs may occur in the course of the leukemias. A blood count settles the diagnosis at once. Scurvy may conceivably be mistaken for rheumatic or Schoenlein's purpura. In this rather rare disease there are pain and swelling in the knee joints and purpuric spots which are almost invariably small and confined to the lower legs. Rarely do they occur above the knee. There is usually fever and slight leucocytosis. The gums are never involved.

Treatment of scurvy is entirely dietary. Orange, lemon or lime juice is specific. Green vegetables are also specific. It is only necessary to give these substances and the patient rapidly recovers. Further attacks are prevented by eating a varied diet containing fruits and green vegetables. Canned vegetables do not contain as much of the antiscorbutic principle as fresh vegetables, but dried vegetables still contain a considerable amount.

Scurvy now is not a common disease, yet it does occur and it is well to be on the watch for it. It is disabling and even may be fatal.

It is one of the few diseases in which correct diagnosis can be followed by specific treatment. The recognition is, therefore, important.

CLASSIFICATION TO AID IN SELECTING PATIENTS FOR WORK IN SANATORIA.

At the Municipal Sanatorium, Otisville, New York, over 300 positions are filled by patients. To aid the physician in selecting patients and assigning to them their several occupations, W. T. Cannon has worked out several charts which show (1) the work classification; (2) the work assignments; (3) a weekly census and stage of disease of the patients; and (4) the patient's history and past work assignments. This plan gives the physician the opportunity to find out quickly the condition of all patients, to decide readily whether a patient's complaints about the work are legitimate, and it helps immeasurably in the work assignments.

Cannon, W. T.: Classification to Facilitate the Selection of Patients for Work in a Tuberculosis Sanatorium. American Review of Tuberculosis, April 1920, Vol. IV, No. 2.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

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PNEUMONIA A PUBLIC HEALTH PROBLEM.*

BY GEO. C. RUHLAND, M. D., COMMISSIONER OF HEALTH.

MILWAUKEE.

As a killing disease, pneumonia heads the list. So far as the records of the Milwaukee Health Department are concerned, pneumonia has always been the cause for more deaths than any other communicable disease, tuberculosis not excepted.

Since 1915 the same holds true for the state of Wisconsin. According to the mortality statistics as published by the Bureau of the Census, pneumonia has outdistanced tuberculosis as the leading cause of death for communicable disease. Well over 100,000 people die annually from pneumonia in the United States. The death toll from influenza-pneumonia during the 1918 epidemic ran over the half million mark.

Notwithstanding this frightful toll in human life, there has remained, and still exists, a most unwarranted inactivity, if not indifference, with regard to the control of this disease.

When it is considered that deaths from pneumonia occur largely in early adult life, it must be apparent that the economic loss occasioned through this disease is considerable. Even estimating human life at the figures that were current among economists before the war—that of $5,000 a life—we would have an annual monetary loss through pneumonia of approximately $5,000,000,000. Though the war has made commonplace the use of large figures, nevertheless, the continued expenditure of this amount of money, if preventable, even if only in part, must compel the interest and action of those who are charged with the responsibility of protecting human life.

The question naturally arises—if these are facts that have been known, why is it that public and professional interest has not been aroused on this problem and been led to more definite action for the checking of this scourge?

There are several reasons that may serve to ex-

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*Read before the State Medical Society of Wisconsin, La Crosse, Wis., Sept. 9, 1920.

plain this almost anomalous situation. The most potent of these reasons undoubtedly exists in the attitude of the medical profession towards the development of pneumonia as a disease arising within the patient himself. That is to say, it was assumed (and still is by many) that the organisms causing pneumonia normally lodge on the mucuous membranes of the healthy individual, and that under influence depressing to their human host, such as chilling of the body, these organisms develop pathogenic properties and precipitate an attack of the clinically recognizable infection known as pneumonia. As a consequence of this attitude, little or no progress has been made in the control or prevention of the disease.

Fortunately, that attitude is now giving way to a newer and better understanding. Notably, the work done at the Rockefeller Institute has led to a clarification of our understanding and holds great promise, not only for the prevention and control of the spread of the disease, but also for the curative aspect in the treatment of pneumonia.

According to the researches of Rufus Cole of the Rockefeller Institute, it appears that contrary to the former concept, the organisms causing pneumonia are *not* normally found on the mucous membranes of individuals, and that pneumonia arises largely from contact with acute cases. That same investigator has also shown that the pneumonia carriers are no more frequent than they are for other contagious diseases.

To this should be added the teaching of Dr. Prudden, who for years maintained that dust played an important role in the spread of pneumonia.

Here, then, we have some very important data to guide us in our control efforts of this disease.

First of all, it seems essential that pneumonia should be made reportable, along with other communicable diseases.

Strange as it may seem, pneumonia has not been made a reportable disease, the city of Hartford, Conn., excepted, up to the time of the great influenza-pneumonia epidemic of 1918, and then only as a temporary measure. Practically none of the states, even at the present time, have such requirements.

In Milwaukee we have, however, under the special authority which the Charter grants that city, declared pneumonia a reportable disease.

Public health protection demands, however, in addition thereto, quarantine for the diseased person and his immediate contacts.

There is no longer any question that the spread of pneumonia is essentially due to the contact with the patient or those in his immediate surroundings.

It is obviously necessary, therefore, that the public be kept away from the pneumonia patient, as well as those in immediate attendance—which means quarantine.

Nothing is gained by having gossipy friends run in and out of the home of the pneumonia patient; the patient surely is not benefited any by the recounting of tactless gossip about so and so being desperately sick and not expected to live. As for the visitor and the public at large such calls furnish a definite means for the contraction and spread of the disease.

While it is not my intention to enter here, to any extent, upon a discussion of the bacteriology of pneumonia, it yet seems properly within the scope of this paper to refer, briefly, to some features in the bacteriological examinations of the pneumonia patient.

Elaborating upon the work of Neufeld, who demonstrated that different stains of pneumococci differed immunologically, Cole and his colleagues of the Rockefeller Institute, divided pneumococci into several groups (four).

Bacteriological examination of the sputum to determine the type of infection is of importance not only from a diagnostic point of view, but for the prognosis of the case as well, since it has been demonstrated that one group is responsible for at least one-third of the cases ending fatally, which means more deaths from infection with this type of pneumococcus than occur from meningitis, typhoid, diphtheria, and scarlet fever combined.

Fortunately, it appears that serum treatment can be applied with considerable success in this type of infection.

While immunization has been attempted with apparently good results, especially in some of the army camps (Upton) during the influenza-pneumonia epidemic of 1918, most observers are still very conservative with regard to the practice of immunization, granting only comparatively a short time protection from the use of such a procedure.

McCoy of the U. S. P. H. S., in fact, denies practically that there is any virtue from the use of vaccines.

In a series of 160 cases of our own that were given mixed sero-bacterin for influenza-pneumonia, only one developed influenza-pneumonia and two developed influenza.

In another group of 93 cases who were treated with pneumococcus vaccines 1, 2 and 3, two developed influenza but not pneumonia; two developed pneumonia, one recovered and one died, the cause of death being given as influenza, which more properly, perhaps, should be called influenza-pneumonia.

While it is true that these attempts at immunization were undertaken among department employes and others who were greatly exposed to infection from pneumonia, we do not feel that these cases are sufficient to warrant any final conclusion. I am, however, still inclined to believe that the results are sufficiently encouraging to encourage further investigation along this line.

A word, finally, seems also justified with regard to other control measures, such as the wearing of masks and the suspending of sheets around the bed of the pneumonia patient.

The surrounding of the bed of the patient by sheets, preferably kept damp, seems to serve a useful purpose in lessening the danger of spreading the disease by droplet infection.

As for the use of masks to be worn by the patient, we frankly feel that this cannot be carried out satisfactorily. On the other hand, the face mask should be worn by the nurse or attendants, and the doctor.

Scrupulous cleanliness of hands of those in contact with the case, as well as cleanliness of the utensils used by the patient, and the disposal and disinfection of the discharges from nose and mouth, should be rigidly insisted upon.

Summarizing, in conclusion, the points I want to make, I wish to state that I believe that for the better control, respectively, for the lowering of the morbidity and mortality from pneumonia, the following should be put into effect.

First—The prompt reporting of all cases.

Second—Quarantine.

Third—Bacteriological determination of type of pneumococcus.

Fourth—The use of sheet and mask, and scrupulous personal cleanliness of attendant, and disinfection of all utensils used by the patient as well as the sterilization of the discharges from nose and throat.

DIETS IN DISEASE PREVENTION.

BY DR. H. P. GREELEY,
MADISON.

Preventive medicine, in its relation to nutrition, may be considered from many angles.

First—The specific nutritional disorders caused by an absence in the diet of certain vital principles often known as vitamines. These diseases are Ricketts, Scurvy, Beri-Beri, Pellagra, Xerophthalmia, and perhaps other indefinite run down states.

Second—The loss of vitality, incident to an individual, or a race of individuals, who are poorly nourished, causing thereby a much larger morbidity from chronic infections like tuberculosis and a higher mortality from other chronic infections like syphilis and a deterioration of the race from the point of view of physical fitness and fertility.

Third—The probable effect of improper diet in the causation of degenerative diseases such as Obesity, Diabetes, Arteriosclerosis and Chronic Renal Insufficiency.

Fourth—The prevention of certain morbid states, notably Acidosis, by proper dietary measures.

Fifth—Food as a carrier of disease through contamination, or spoiling.

In the first category of the so-called Deficiency Diseases, it is known that a restricted diet, in which the only cereal food is polished rice, or highly milled wheat flour, may cause Beri-Beri, unless one adds peas, beans, or some other whole cereal, such as whole wheat, oatmeal or rye. Any highly milled cereal from which the coating or germ has been removed, may be equally injurious if it is the sole cereal in an otherwise poor and meagre diet which does not contain milk.

Secondly, Scurvy may result from a diet which lacks fresh fruits and vegetables. It is not often seen today though occasionally infants have it when their dietary consists of proprietary foods or cereals without fresh milk. Rickets also supervenes when the diet of an infant contains no fresh milk but proprietary foods or condensed milk. The prevention is simple—fresh milk is a sine qua non to healthy growth and development.

Pellagra is another Deficiency Disease—still unsettled as to its exact origin. A liberal mixed diet, with adequate protein, will cure the condi-

tion in the majority of instances especially when begun early.

Xeropthalmia is a common result of incorrect feeding in experimental animals and has its counterpart in human pathology, epidemics having occured in countries where leafy vegetables and butter fat are scarce or unused—the condition is cured at once by the addition of these to the diet.

The loss of vitality due to under-nourishment had only too vivid a proof during the war among many of the European races. Tuberculosis, Diarrhoeal infections and Syphilis increased in morbidity and mortality by leaps and bounds. The contrary is often seen in Syphilis here. An ill-nourished Syphilitic does not respond to treatment, but as soon as his nutrition improves he does. The importance of proper nourishment in the prevention and cure of Tuberculosis needs no emphasis here.

England found out the results of chronic under-nourishment when she began to measure her manhood for military service and found such a huge percentage physically unfit and under-size.

The tremendous increase of degenerative diseases, notably Obesity and Diabetes in civilizations who eat and live by the sweat of other men's brows, proves conclusively that overeating is a pitfall only second to under-nourishment.

Magnus Levy had concluded before the war that the strenuosity and nervous tension of modern life produced Diabetes, but since the war a drop in the incidence of Diabetes in Berlin of nearly 200% convinced him that over-eating and not nerve strain was the sole important factor.

The avoidance of degenerative diseases by a race or people can come only through a conscious, intelligent choice of the kind and quantity of food. Instinct does not help us any longer. Our foodstuffs are too artificial and unnatural.

The prevention of Acidosis is a subject of vast proportions in itself and does not come legitimately here, neither does food as a carrier of disease.

In general we may say that the modern diet should be a liberal mixed diet containing plenty of fruits and vegetables which supply the bulk and the water-soluble and anti-scorbutic vitamines, and should also contain liberal quantities of milk and its by-products, butter or cream, which supply the fat soluble vitamine and anti-neuritic substances. Milk is the most perfect food from the point of view of growth and development. The most expensive milk, pure and uncontaminated, is the cheapest food.

Next in importance in preventive medicine is the necessity of limiting by intelligence the total amount of food that a person consumes. In these days of prepared foods, enormous quantities of artificial concentrated nourishment are consumed and at the same time less physical labor is expended in their preparation, and in the struggle for existence; over-eating is a certain factor and acts as a slow poison in the physical deterioration of the race by the production of degenerative disease.

In America there is less danger of Deficiency Disease due to a lack of McCollum's "Water Soluble B" and "Fat Soluble A" than of disorders due to improper food affecting the growth and development of teeth and the general resistance of the body and too much food contributing to the increase in degenerative diseases.

The plea of the future is for greater and greater intelligence in the choice and preparation of diets for both children and adults.

RESISTANCE OF THE RED BLOOD CORPUSCLE AND ITS RELATION TO THE WASSERMANN TEST.

BY F. E. CHURCH, BACTERIOLOGIST LABORATORY, MILWAUKEE HEALTH DEPARTMENT.

The resistance of the red blood corpuscles has been of clinical interest for some time, especially in cases of Pneumonia, Anemia, etc. It is also generally known among laboratory workers that red blood corpuscles, even when kept in normal saline, upon ice, in time become fragile; that while on gross appearance they appear to be normal, they have become more fragile and their condition can best be determined by the so-called "Resistance test."

The author believes this test should be adopted as a routine titration in connection with the Wassermann test. We titrate our Antigen, complement, and amboceptor, why not the red blood cells for fragility?

The following technic, slightly modified after the methods used by Smith and Brown, Gay, Moss, Kassner, and Pearce, is a ready means of determining the resistance of human and animal corpuscles to salt solution of different strengths.

Technic.

(1) Chemically pure sodium chloride is dried for two hours at 170° C and immediately weighed in amounts necessary to make 500 c.c. of salt solution ranging from 0.1 to 0.6% in gradations of 0.02%. This means the preparation of twenty-six different solutions, which should be preserved in proper sized bottles fitted with tight rubber stoppers.

When the test is needed only occasionally, these solutions are readily prepared by filling a 50 c.c. burette, graduated in one-tenths, with distilled water, and another with a one per cent solution of the pure dried sodium chloride. (Note C. P. Sodium Chloride may be used and fairly accurate results obtained.) From these, the various solutions are readily prepared, after the following manner:

Per Cent Required		1% Na Cl		Dist. Water
10 c.c. of 0.3% Na Cl	=	3.0 c.c.	+	7.0 c.c.
10 c.c. of 0.35% Na Cl	=	3.5 c.c.	+	6.5 c.c.
10 c.c. of 0.40% Na Cl	=	4.0 c.c.	+	6.0 c.c.
10 c.c. of 0.45% Na Cl	=	4.5 c.c.	+	5.5 c.c.
10 c.c. of 0.50% Na Cl	=	5.0 c.c.	+	5.0 c.c.

This procedure is continued until the final dilution is reached. As a rule it is not necessary to use so large a number of dilutions, as from 0.2 to 0.6% may be sufficient range to indicate the tonicity.

(2) Five cubic centimeters of blood are aspirated under aseptic precautions, from an arm vein of man or the external jugular vein of the sheep and immediately placed in 25 c.c. of a 1% sodium citrate in 0.85% sodium chloride to prevent coagulation. The flask or large centrifuge tube is well shaken and the mixture is centrifuged at sufficient speed to throw down the corpuscles. The corpuscles are washed once or twice, with sterile normal salt solution. After the last washing the supernatant fluid is removed, leaving the erythrocytes at the bottom of the tube.

A series of small test tubes are marked appropriately and placed in a rack. To each tube, 3 c.c. of the various salt solutions and 0.05 c.c. of red blood corpuscles (1 drop) are added. The contents of the tubes are well mixed and the whole series is placed in the refrigerator for from eighteen to twenty-four hours, after which the readings are made.

The lowest dilution showing even a trace of hemolysis, represents the point of *minimal resistance.* The dilution of salt solution in which there is complete hemolysis represents the *maximal resistance.*

The results of the above test on normal human, and sheep's corpuscles, were as follows:

Corpuscles	Resistance (average) Minimal Per Cent	Maximal Per Cent
Fresh normal human	0.47	0.30
Fresh normal sheep, age 1 year	.40	.30
Fresh normal sheep, age 2 years	.45	.40
*Fresh normal sheep, age 3 days	.50	.42
*Fresh normal sheep, age 1 week	.70	.50

*Note. (Kept at ice box temperature from 3 to 7 days.)

The author tried using sheep corpuscles kept for 1 week at ice-box temperature in the Wassermann test with the following variation in results, as compared with fresh corpuscles. The final readings being taken after tubes had stood in ice-box overnight.

Patient No.	Results Fresh R. B. C.	1 Week Old R. B.C.
1	+ + + +	+ + +
2	—	—
3	+ + +	+
4	—	—
5	—	—
6	+ + + +	Doubtful
7	—	—
8	—	—
9	+ + + +	+ +
10	+ + + +	Doubtful

Conclusion:

(1) Resistance tests should be done on sheep's corpuscles as well as human in connection with the Wassermann test for the following reasons:

(1) To determine the general condition of the donor's blood.

(2) To determine degree of non-specific hemolysis.

(3) To avoid false negatives.

(4) To avoid weak and doubtful positives.

(5) Corpuscles showing a minimal resistance above .50% and a maximal resistance above .40% should not be used in the Wassermann test.

The value in using fresh corpuscles from a young, healthy sheep, in the Wassermann titration, cannot be overestimated.

BOOK REVIEWS

Diseases of Children. Presented in two hundred case histories of actual patients selected to illustrate the diagnosis and treatment of the diseases of infancy, and childhood, with an introductory section on the normal development and physical examination of infants and children. By John Lovett Morse, A. M., M. D., Professor of Pediatrics, Harvard Medical School; Visiting Physician at the Children's Hospital, and Consulting Physician at the Infants' Hospital and at the Floating Hospital, Boston. Third edition. W. B. Leonnard Publishing Co., Boston.

The value of case teaching for the undergraduate is undisputable. The active practitioner also understands how necessary it is to satisfy that "thirst for a good clinic." Just these needs and wants does Dr. Morse's book supply.

The third edition of this excellent work certainly justifies its appearance, not only because it has been revised and amplified, but also because it represents certain ideas and ideals in teaching that, in fact, demand frequent new editions and up-to-the-minute presentations.

An introductory section on the normal development and physical examination of infants and children will simply force the realization of the importance of this subject on the reader. It is not the stereotyped lot of physiological and anatomical data found in so many textbooks, but is a refreshingly interesting exposition of the subjects, full of valuable diagnostic hints and points most clearly to the practical significance of anatomical and physiological peculiarities in the young.

The proper elicitation of various reflexes and their significance, blood pressure tables and a good practical discussion of stools in infants are some of the noteworthy subjects also taken up in this section.

The index is so well planned, the cases so numerous and comprehensive and their discussion so complete that the book has great value as a reference work. A truly masterly discussion of the differential diagnosis of each case presented deserves special comment.

Infant feeding is well covered but the calculation of formulas is rather cumbersome.

The outstanding characteristics of these case histories are that they are original and fascinating, and should stimulate the reader to do careful clinical work.

—*A. L. K.*

A Diabetic Manual. By Elliott P. Joslin, M. D. Second edition. 190 pages. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Cloth, $1.75.

One can hardly ask for a more practical guide to the best treatment of diabetes than this small volume. Its 180 pages of text and tables are filled with all the essential knowledge in this field. It is invaluable to the physician, the dietitian and the intelligent diabetic patient. There is a wholesome freedom from any theoretical discussion.

It is more than it purports to be, for it has a wider field of usefulness than in the treatment of diabetes alone. The general information about metabolism and food brings home to the general practitioner the tremendous importance of exact methods in the treatment of all metabolic disorders, and gives him an impetus to the further study of nutrition and dietotherapy in internal disease.

The book lays down the fundamental principles of treatment without prescribing a routine, that greatest pitfall in the treatment of diabetes. One realizes the absolute necessity of individualization.

Its only fault is also a virtue. It presents the subject in such a simple, straightforward way that the inexperienced might feel perfectly competent to treat any diabetic. Yet we must realize that though it may be simple to one who has spent fifteen years of study on the subject, the practical details of treatment require first of all, thorough knowledge of the disease, a persuasive personality on the part of the physician, an intelligent patient and a complete hospital organization.

—*H. P. G.*

CEREBELLAR ABSCESS DIAGNOSED. POSTMORTEM.

The case recorded by Abraham Lobell, New York (*Journal A. M. A.*, Aug. 28, 1920), is a concrete example of the serious complications to which the human organism is subjected in the presence of a chronic focal infection. In this man, it was the cause of a cerebellar abscess and of an osteomyelitis of the foot. The history, physical findings and roentgenogram pointed to an intracranial infection of otic origin. The usual radical mastoid operation was performed. The unusual findings were an absence of all landmarks due to previous inflammatory processes. The cortex was exceedingly dense and sclerosed. There were no mastoid cells encountered; no pus was found until the antrum was reached, and there we found only a few drops. A search for a track leading into the cranium was unsuccessful. There was no necrosis or softening of bone at this point that would permit the passage of a probe. The operation was very difficult and the necessary speed could not be employed. In the first place, the dense bone prevented the oprator from using the rongeur, an instrument that saves considerable time. Secondly, the sinus was in an anomalous position. It was through skill and vigilance that the sinus was saved. Throughout the operation the condition of the patient was not satisfactory. He was cyanotic and the respirations were irregular. The operator was compelled, under these circumstances, to give up the plan of entering the cranial cavity at this stage. He felt that it would be to the best interest if he postponed further manipulations until the patient rallied. The patient died in the ward shortly after the operation, from paralysis of respiration. A partial necropsy disclosed a cerebellar abscess. The cultures revealed a mixed infection, with a pneumococcus as the predominating organism.

CONTROL METHODS IN TREATMENT OF DIABETES MELLITUS.

Solomon Strouse, Chicago (*Journal A. M. A.*, July 10, 1920), presents the treatment of diabetes mellitus from a point of view not usually employed in consideration of the subject. He points out that diabetes mellitus is a much misunderstood disease, but the difficulties of treatment are often greatly exaggerated. The first and most important method of control lies in a careful history and physical examination. In this respect diabetes differs in no way from other diseases of internal medicine, and yet time and again he says he has seen treatment of the diabetic undertaken by the physician who had made no effort to ascertain any facts in the patient's history, which from the very nature of things must have influenced his treatment had they been known. For example, analysis of case records shows that diabetes in the young is usually the severest type of the disease, but that when the young diabetic has a family history dotted with diabetic relatives his chances are improved. Further analysis shows that the later in life the disease starts the milder it is likely to be, and a still more important fact can be brought out from knowledge of the length of time a patient has been sick, the nature of his symptoms, and the kind of treatment he has undergone. If the history and physical examination are clearly understood and their importance not neglected, the rest of the treatment of the diabetic is a matter of careful correlation of clinical condition, food intake, and the results of some simple laboratory findings. The identification of the reducing substance as glucose is necessarily the first step in the laboratory work. The amount of the reducing substance is even less important than certainty regarding its nature. The presence or absence of signs of acid intoxication then follows. The first and perhaps most urgent need of proper therapy is individualization of the patient. The second principle is to get the patient sugar free without producing or increasing an already existent acidosis. In the mild case this is done simply enough by attention to carbohydrates, which, gradually reduced, will almost invariably result in an aglycosuric urine. In the severe, or even in the doubtful cases, in the presence of acidosis or threatened acidosis, the cautious physician will leave the carbohydrates alone and devote his attention to the fats. Any patient, no matter how severe his case, can and should be made aglycosuric. It is only by recognizing the truth of this that it is possible to fulfil the third requirement in treatment, namely, increase in the patient's food tolerance. The patient's cooperation is essential to any permanent results.

POST-WAR DISEASES IN FLANDERS.

Inferior food, and the necessity of living in huts and shacks pending the rebuilding of their ruined homes, has caused much tuberculosis, bronchitis and digestive disorders among the inhabitants of the devastated regions of Flanders. Hundreds of lives are being saved monthly by the medical service operated with the funds and under the direction of the American Red Cross. In addition to the peculiarly post-war cases, which includes surprising number of accidents from tampering with shell fuses picked up in the fields, there is much cancer, anthrax and diabetes. During one month last spring the circuit-riding doctors maintained by the Red Cross made 1,150 visits to the homes of patients.

Red Cross hospitals are being operated at all important centers. A hospital and dispensary with accommodations for thirty in-patients is now being constructed at Roulers as a permanent monument to America's sympathy. Another large hospital is operating at Ypres. At Houthen, where Belgium General Headquarters were located during the war, scores of sufferers from skin diseases are treated. This hospital furnished accommodations for fifty in-patients in its comfortable wards.

The only operating theatre in the region has been installed by the Red Cross at its Werwicq Hospital. Here poor peasants who might never have been able to meet the expense of a journey to the interior for treatment, are being handled in ever-increasing number. The surgical ward of twenty beds is constantly full and there is a long waiting list.

Fifty-three villages in the region have been fitted out with dispensaries located in the town hall or school. The dispensaries are furnished with drugs and surgical dressings from the Red Cross, distributed from time to time by the circuit-riding physicians. In most cases the dispensaries are in charge of Belgian nuns with some training in nursing. Wherever possible, ex-soldiers with experience in the Belgium medical corps have been put in charge. The advent of the dispensaries has been received with the most pathetic gratitude by the villagers, who have been for months without any possibility of medical attention in case of accident or sickness.

Not the least important work of the Red Cross medical department in Belgium is the institution of maternity wards in various centers. There are now four in operation: one at Roulers, one at Werwicq, a twelve-bed ward at Peperinghe, and a fully equipped maternity hospital at Ypres.

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ACTION OF THE ULTRAVIOLET LIGHT ON THE INTRADERMIC TUBERCULIN REACTION.

In studying the action of the ultraviolet light, Edgar Mayer of Saranac Lake performed experiments as follows: (1) Tuberculous guinea pigs were exposed to the light and then given intradermic tests; (2) tuberculous guinea pigs were given tests and then exposed to the light; (3) old tuberculin that had been exposed to the light was used for intradermic tests on tuberculous guinea pigs; and (4) tuberculous patients were given skin tests both before and after exposure to the light, while some were tested with tuberculin that had been exposed. Mayer finds that exposure of the skin to the light, both before and after the intradermic test, tends to blunt the skin reaction to tuberculin; and that tuberculin exposed to the light loses some of its capacity to produce reactions.

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THE DOCTOR'S WIFE.

"A doctor's wife has certain duties to perform unknown to a merchant's wife. She is restricted socially because if she hobnobs with people who are not her husband's patients the latter will feel slighted and sooner or later her husband will realize the mistake his wife is making. She must remember the faces of all her husband's patients so that she may not slight any of them when she meets them, but she must forget their respective diseases provided she has heard about them from a husband who has been, perhaps, too communicative on the subject. She must not thrust herself too prominently into the limelight of publicity, since by doing so she will militate against her husband's success, for before long some sympathetic patient of the weaker sex, or some sympathetic patient of the sterner sex, with decided proclivities to gossip, will remark the husband's frayed collar, a spot or two on his coat, his wan looks, which cannot possibly be due to any other cause than to the fact that his wife is neglecting her household duties—hence his under-fed appearance. In a word, the social side of her life is one of constant restriction born of what the little world of constant prattle conceives to be her sphere of activity."

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Committee on Health and Public Instruction

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The Wisconsin Medical Journal, Official Publication

LIST OF EXECUTIVE OFFICERS OF COUNTY MEDICAL SOCIETIES.

County.	President.	Secretary.
Ashland-Bayfield-Iron	J. M. Dodd, Ashland	Dell Andrus, Ashland.
Barron-Polk-Washburn-Sawyer-Burnett	I. G. Babcock, Cumberland	B. N. Webster, Rice Lake.
Brown-Kewaunee	W. E. Fairfield, Green Bay	A. J. McCarey, Green Bay.
Calumet	E. Rathert, Chilton	R. C. Meyer, New Holstein.
Chippewa	E. P. Ellenson, Chippewa Falls	G. M. Smith, Chippewa Falls.
Clark	H. H. Christofferson, Colby	E. L. Bradbury, Neillsville.
Columbia	W. J. Thompson, Portage	John Bentley, Portage.
Crawford	C. B. Lumsford, Gays Mills	A. J. McDowell, Soldiers Grove.
Dane	W. H. Sheldon, Madison	H. P. Greeley, Madison.
Dodge	F. T. Clark, Waupun	A. E. Bachhuber, Mayville.
Door	H. C. Sibree, Sturgeon Bay	T. C. Proctor, Sturgeon Bay.
Douglas	A. J. Hovde, Superior	J. C. Kyllo, Superior.
Dunn-Pepin	N. L. Howison, Menomonie	L. J. Hartman, Menomonie.
Eau Claire	R. E. Mitchell, Eau Claire	P. E. Riley, Eau Claire.
Fond du Lac	O. M. Layton, Fond du Lac	D. N. Walters, Fond du Lac.
Grant	C. M. Schuldt, Platteville	M. B. Glasier, Bloomington.
Green	W. B. Gnagi, Monroe	W. B. Monroe, Monroe.
Green Lake-Washara-Adams	G. E. Baldwin, Green Lake	A. J. Wiesender, Berlin.
Iowa	D. B. Hamilton, Dodgeville	W. J. Pearce, Dodgeville.
Jefferson	Phillip Lelcht, Lake Mills	H. P. Bowen, Johnson Creek.
Juneau	E. H. Townsend, New London	A. T. Gregory, Elroy.
Kenosha	J. F. Hastings, Kenosha	H. M. Ripley, Kenosha.
La Crosse	F. A. Douglas, La Crosse	Jens Rosholt, La Crosse.
La Fayette	H. O. Shockley, Darlington	R. B. Quinn, Darlington.
Langlade	L. A. Steffen, Antigo	J. C. Wright, Antigo.
Lincoln	H. G. Hinckley, Merrill	A. R. Wittman, Merrill.
Manitowoc	J. M. Kelly, Cato	E. C. Cary, Reedsville.
Marathon	R. W. Jones, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. W. Boren, Marinette	C. H. Boren, Marinette.
Milwaukee	F. C. Studley, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	S. D. Beebe, Sparta	T. J. Sheehy, Tomah.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	M. J. Sandhorn, Appleton	G. T. Hegner, Appleton.
Ozaukee	C. A. Balkwill, Grafton	W. H. Drissen, Port Washington.
Pierce	C. A. Dawson, River Falls	Rollo Cairns, River Falls.
Portage	D. S. Rice, Stevens Point	F. A. Marrs, Stevens Point.
Price-Taylor	G. H. McClure, Westhoro	G. C. Wichman, Rib Lake.
Racine	F. W. Pope, Racine	Susan Jones, Racine.
Richland	R. H. Delap, Richland Center	G. Benson, Richland Center.
Rock	M. G. Spawn, Beloit	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	A. J. Gates, Tigerton	W. H. Cantwell, Shawano.
Sheboygan	T. Gunther, Sheboygan	Harry Heiden, Sheboygan.
St. Croix	W. H. Banks, Hudson	O. H. Epley, New Richmond.
Trempealean-Jackson-Buffalo	E. A MacCornack, Whitehall	C. F. Peterson, Independence.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	F. W. Aplin, Waukesha	S. B. Ackley, Oconomowoc.
Waupaca	E. W. Jones, Weyauwega	H. A. Jefferson, Clintonville.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

BROWN-KEWAUNEE COUNTY

The regular monthly meeting of the Brown-Kewaunee County Medical Society was held at the Beaumont Hotel, Green Bay, September 9, about eighty physicians from the two counties and Oconto, Seymour, Black Creek, Kaukauna, Manitowoc, Shiocton and New London being present.

Dr. William H. Cameron, head of the Radium Institute of Pittsburg, gave a very interesting and instructive talk on Radium. He explained the process of manufacture of the metal, painting a graphic word picture of the process from the time the ore is mined until it reaches the refinery in Pittsburg, and also exhibited three reels of moving pictures showing the whole method of manufacture of the metal.

ROCK COUNTY

At the regular meeting of the Rock County Medical Society, held August 31, in Yost Park, Beloit, forty-four physicians and their wives were present. Volley-ball, baseball, and quoits were entered into with enthusiasm by the medical men, after which a delicious supper was served.

WASHINGTON COUNTY

The Washington County Medical Society held its regular meeting at the Hartford Hospital at Hartford on August 31. Dr. William Ackermann of Milwaukee gave an interesting talk on "Gastric Ulcer and Carcinoma," illustrated with lantern slides. The following officers were elected for the ensuing year: President, F. W. Lehman, Hartford; vice-president, Dr. D. W. Lynch, West Bend; secretary-treasurer, Dr. A. H. Heidner, West Bend; delegate, Dr. D. W. Lynch, West Bend; alternate, Dr. K. T. Bauer, West Bend; and censor, Dr. W. J. Wehle, West Bend.

ASSOCIATION NEWS

WISCONSIN CONFERENCE OF SOCIAL WORK.

A special section is to be devoted to Mental Hygiene and another to Public Health at the Annual State Conference of Social Work to be held this year, October 13 to 15, in Oshkosh.

A number of nationally prominent speakers have been secured, including Julia Lathrop, Chief of the National Children's Bureau, Washington, D. C.; Allen T. Burns, New York City, President of the National Conference of Social Work; Dr. Graham Taylor of Chicago Commons, for many years a national figure in social work; Mrs. Ira Couch Wood of Chicago, nationally prominent in nutritional clinic work; Dr. Valeria Parker of Hartford, Connecticut, Secretary of the American Social Hygiene Association; Judge Clark Higbee of Grand Rapids, Michigan, who was one of the first judges to institute mental examinations of persons charged with crime; and others both from outside Wisconsin and within the state.

A strikingly successful method of preventing the spread of communicable disease will be one of the topics presented by a Wisconsin health officer.

Time is to be allowed for general discussion and a comparison of local situations.

The conference this year promises to eclipse any that have thus far been held, owing to a new militant program which has been adopted during the past year, and to the good fortune which has attended the efforts to secure nationally prominent speakers.

The Oshkosh people are planning to entertain in their homes those who prefer not to go to the hotels. Those desiring to take advantage of this hospitality should write at once to Edward Lynde, Secretary of the Conference, Madison, or Mrs. E. R. Williams, Oshkosh.

CORRESPONDENCE

New York, August 31, 1920.

Editor, Wisconsin Medical Journal,
Milwaukee, Wis.

Dear Doctor:—

I have been requested by Prof. U. Carpi, of Lugano, Switzerland, the General Secretary of the International Association of "Pneumothorax Artificialis," to translate the following circular letter from the French which he had recently sent me, and to cause it to be published in as many of the American medical journals as will be willing to give it space. May I ask you to extend to it the hospitality of your esteemed paper, and believe me

Very truly yours,

S. Adolphus Knopf, M. D.

INTERNATIONAL ASSOCIATION OF "PNEUMOTHORAX ARTIFICIALIS."

Lugano, August, 1920.

The International Association of "Pneumothorax Artificialis," of which the work was paralized during the long war, desires to resume its activity by inviting all former members of the Association to renew their subscription and all other physicians interested in artificial pneumothorax to send their names and addresses to Prof. Umberty Carpi, Lugano, Switzerland, and to become members.

The purpose of the association is to spread all practical and scientific information concerning artificial pneumothorax. Although induced pneumothorax for therapeutic purposes has become remarkably prevalent (*"Bien que la diffusion de la therapie du Pneumothorax scit devenue tres remarquable"*), it has remained a therapeutic procedure applied only by physicians specially trained and experienced in this operation. For the convenience of the patients who may be obliged to change their residences, to know the names and addresses of physicians who practice artificial pneumothorax is of great value, in order that the patient may continue the treatment by periodic refilling. A complete list of physicians practicing artificial pneumothorax will be published with the scientific journal known as "Pneumothorax Therapeutique" for 1920-1921, edited by Carlo Forlanini. This list will be

sent to all the members and to the most important medical societies, medical academies, and similar institutions of the different countries. In the journal will be enumerated and discussed all the world's literature on pneumothorax. The association will continue its labors under the policy indicated by the illustrious master and creator of artificial pneumothorax therapy. As soon as the finances of the society will permit the renewal of the publication, the editor will put himself in communication with the editors of such medical journals of other countries as are publishing articles on artificial pneumothorax. For the present these are "die Sonderhefte des Tuberkulose Centralblattes ueber Lungenkollapstherapie" and the collected monographs in the Journal "La Tuberculosi" which appears in Rome. (I trust that our very excellent "American Review of Tuberculosis," edited by Prof. Allen K. Krause of Baltimore, will be included in this list.—S. A. K.)

The subscription price of 5 francs should be addressed to the General Secretary, Prof. U. Carpi, Lugano. The subscriber is entitled to receive the journal with the list of names. Those who desire to receive the monographs of the journals indicated should make a request for them to the General Secretary who also has an international exchange office for all publications appertaining to artificial pneumothorax. Summaries in English, French, and German on any topic relating to artificial pneumothorax will be gratefully received and published.

PROF. U. CARPI,
General Secretary, Lugano, Switzerland.

NEWS ITEMS AND PERSONALS

The physicians of Reedsburg have recently launched a campaign to secure for that city and the surrounding communities a modern hospital. The plan as advanced is for purely a community institution, erected as such and maintained as such, and the financing of the project will be conducted on the memorial plan, several large subscriptions already having been pledged.

The resignation of Dr. E. C. Grosskopf, temporary house physician at South View Hospital, Milwaukee, has been accepted by the health department.

The sum of $2,000 was bequeathed to St. Catherine's Hospital, Kenosha, by Emil C. Tecktonius, according to the will filed for probate.

Ground will be broken early this fall for an addition to St. Nicholas Hospital, Sheboygan, and a new dormitory which will accommodate sixty nurses. The new buildings will cost $250,000.

Dr. A. A. Pleyte, who for a number of years was connected with the staff of the Wales Sanitarium, has been appointed head of one of the departments of the National Sanitarium at Johnson City, Tennessee, and has left Wisconsin to assume his duties there.

Doctors H. J. Gramling, Joseph J. Gramling, Elmer H. Gramling and Edgar J. Craite announce their permanent association under the firm name of The Gramling Clinic, and will be located at 1321 Forest Home Avenue, Milwaukee.

An active campaign has been conducted to raise funds by subscription to stock for the erection and equipment of a new up-to-date hospital in Beaver Dam.

At the annual session of the Wisconsin Conference of the Methodist Episcopal churches held in Green Bay during the first week in September, Dr. Julius J. Bellin, president of the board, succeeded in getting a resolution adopted by the conference to raise the coming year the sum of $200,000 to build the new addition to the Deaconess Hospital at Green Bay.

At a meeting of the newly organized Hospital Association held at the Hotel Pfister, Milwaukee, September 16, Dr. J. W. Coon, superintendent of River Pines Sanatorium, Stevens Point, in speaking on the "Problems in the Hospital Treatment of Tuberculosis," declared that the disease had been heralded as so dreadful that the fear resulting has had as disastrous effect as the disease itself and has developed into what might be termed as "Psychophobia". He also stated that Wisconsin leads all other states in the eradication of the disease, having a mortality rate of 87 per cent for 1919, as against 107 per cent in 1907.

Dr. Rafael Lamacchia, a graduate of the Schola Medica at the University of Naples, and for five years a lieutenant in the medical corps of the Italian army, has located in Kenosha and will take up practice there after two months of research work in the Columbus Hospital at Chicago.

The Physicians' Radium Association of Wisconsin, with offices at 516 Wells Building, Milwaukee, recently received a delivery of an additional 200 mgs. of radium.

Dr. Roy Brindley has located at Mt. Hope and taken up the practice of his profession there.

Dr. J. P. Gillis, who since the war has been engaged in practice at Two Rivers, has removed to Polar.

The Wisconsin conference of the Catholic Hospital Association held its first annual meeting on Sept. 14 and 15 in the Gesu auditorium, Milwaukee. This conference is made up of a membership of thirty-one Sisters' hospitals, located in the prineipal cities of Wisconsin. All of these hospitals are being rapidly standardized according to the minimum standard of the American College of Surgeons which includes the following five fundamental requirements: (1) Organized staff governed by a constitution and bylaws and rules of procedure. (2) Complete scientific record for every patient brought to the hospital, including history, physical examination, laboratory tests, pre-operative and pretreatment diagnosis and followup record with a view to end results. (3) Adequate laboratory service and facilities of all kinds for modern diagnosis and treatment. (4) Monthly meeting of the staff in appraisal of the efficient administration of modern scientific medicine in

the case of all the patients. (5) A pledge against the secret division of fees.

The rule that a doctor prescribing whisky must write on the prescription the name of the druggist who is to fill it, which has been in existence for some time, will be enforced hereafter, Nelson A. White, chief inspector in the office of Prohibition Director Delaney, has announced. Mr. White also quoted a recent decision of Internal Revenue Commissioner Williams that only pure alcohol can be used in compounding medicines. "Prescriptions calling for a pint of whisky, to which a few ounces of some drug is to be added, must not be filled," the ruling says. Mr. White reiterated the ruling that druggists must not fill prescriptions written on anything but government blanks, except in cases of emergency.

The Theda Clark Memorial Hospital at Neenah has a new addition now under construction that will double the capacity of the institution. The old building will undergo many important changes and when the work is completed the facilities for good service, efficiency and comfort of all concerned, will be among the best in the state.

MARRIAGES

Dr. Charles E. Smith, Amherst, to Mrs. Anna C. Hildebrand, Oshkosh, at Oshkosh, September 8, 1920.

ASSOCIATION NEWS

DIGEST OF PROCEEDINGS.

HOUSE OF DELEGATES.

La Crosse, September 8-10, 1920.

The House of Delegates was called to order by President C. R. Bardeen at 9 A. M., September 8, 1920.

The various reports of the committees as published in the handbook for the House of Delegates were read and accepted. (These will be published in the January issue of the Journal.)

The reports of the officers were read and accepted and the election of officers and committees for the ensuing year was referred to the Nominating Committee. On their subsequent report, the following officers were elected for the coming year: President, Dr. H. W. Abraham, Appleton; first vice-president, Dr. M. A. McGarty, La Crosse; second vice-president, Dr. J. P. Koehler, Milwaukee; third vice-president, Dr. Rolla Cairns, River Falls; alternates to A. M. A., Dr. W. E. Bannen, La Crosse, and Dr. F. G. Connell, Oshkosh.

All other officers and committees were re-elected, and Doctors Edward Evans and T. J. Redelings were re-elected councilors for the Seventh and Eighth Districts. Dr. E. B. Brown of Beloit was elected acting councilor for the Third District during the absence of and until the return of Councilor F. T. Nye.

The president was authorized to appoint a committee of Wisconsin physicians to attend the next meeting of the State Teachers' Association and to ask for the appointment of a committee from the State Teachers' Association to co-operate with the medical profession in promoting better health conditions in our public schools.

The Hospital Committee, appointed by the president during the year, was voted continued as a permanent committee, the members to serve terms of from five to one year in the order given: Doctors Jermain, Fazen, Wiley, Lyman and Connell.

Various miscellaneous matters referred to the Committee on Resolutions and Reports of Officers were reported back to the house with the following actions:

Acting on the recommendation of the managing editor of the Journal and of the secretary of the State Society, the annual dues to the State Society were raised from four to six dollars per year. Of this sum, two dollars is to be credited to the Medical Defense fund and four dollars to the general fund which cares for the publishing of the Journal and the general operating expenses of the society.

In the matter of the Tri-State District Medical Society's suggestion for a joint meeting in 1921, it was unanimously voted that there be no affiliation with that organization and that our own meetings be held annually and under our own auspices as heretofore.

It was voted that the house approve and recommend for adoption the report of the Committee on Medical Education, and a bill be introduced petitioning the Wisconsin State Legislature to make a one year internship at a recognized hospital an obligatory qualification for candidates for license to practice medicine in this state.

The house directed the Hospital Committee to continue its efforts at a proper classification of the state's hospitals; to co-operate with the State Board of Medical Examiners in its investigation into the status of hospitals and training schools; and appropriated three hundred dollars of the society's funds for the committee's use.

The house adopted the following resolutions:

First. "This society, in convention assembled, endorses the work of the Wisconsin Psychiatric Institute in the care of former soldiers suffering from mental derangement, and voices its appreciation of the Service Recognition Board in making available funds for this purpose, and of the Board of Control in its policy of rehabilitation of these unfortunate victims of the late war."

Second. "*Whereas*, the National Board of Medical Examiners conducts an examination of like character to that conducted by the various state boards, and *whereas*, the National Board is recognized by the majority of the state boards as equal to their own, *be it resolved*, that the State Legislature be petitioned to so qualify the present Medical Practice Act as to make it legal for the Wisconsin State Board to accept at its option the standing given the candidate by the National Board of Medical Examiners as an equivalent to its own."

Third. "*Whereas*, in our forty-eight states, there are as many separate examining boards, and *whereas*, licensed physicians in one state may not always practice in other commonwealths without vexatious procedures, and *whereas* the practice of medicine is uniform throughout the length and breadth of the land, *therefore*

be it resolved, that it is the opinion of the House of Delegates that the right to practice medicine in one state should be extended to include the right to practice medicine in any part of the United States.

"*Be it further resolved*, that a copy of this resolution be sent to the proper officers of all State Medical Societies and to quasi-national associations; and that the American Medical Association be especially urged to perfect a plan by which interstate medical practice will be made a reality."

Fourth. "*Whereas* the practice of indiscriminate prescribing of liquor by some members of the medical profession on mere request and without regard to the need of the individual, is bringing our profession into disrepute, and *whereas*, the State Medical Society of Wisconsin as a body desires to affirm its wish that all its members shall render strict obedience to the laws, whatsoever they may be, *therefore be it resolved*, that the State Medical Society of Wisconsin as a body condemns all and every effort on the part of the medical profession to take unfair advantage of the privileges to the physician under the law by the indiscriminate granting of prescriptions for the purchase of alcoholic stimulants.

The report of the secretary as read follows:

REPORT OF THE SECRETARY.

FOR THE PERIOD FROM JANUARY 1 TO SEPTEMBER 1, 1920.

To the House of Delegates:

From an organization standpoint, there have been no changes of importance during the past year. Fifty-four county societies have, as usual, remitted for their members and all counties in the state are organized with the exception of Marquette County.

The total number of 1861 paid 1919 dues, an increase of 27 over 1918, and the largest membership the state society has ever enjoyed. Approximately 75% of the licensed physicians of the state and, with few exceptions, all of the eligible and desirable practitioners of the state are affiliated with us. Compared with other state organizations, we continue the best organized of the western states and no state having as large a number of physicians has as large a percentage as members of its state medical society.

The incomplete report for the year 1920 follows. In comparing the tables of previous years with that of 1920, it should be remembered that the 1920 report covers a period of eight months only, while those for 1919 are for the entire year. The four remaining months of 1920 will materially affect the conditions shown. The attached tables show the 1919 membership complete, the 1920 membership to September first, the losses and gains, the number of delinquents, the deaths, removals and new members for each county and for each district in the state.

STATE MEDICAL SOCIETY OF WISCONSIN.

MEMBERSHIP REPORT.

September 1, 1920.

County Society	1919	1920	Gain+ Loss—	Delinquent	Removals	Deaths	New Members
First District.							
Dodge	32	34	2	2	2	0	5
Jefferson	33	31	—2	2	0	0	0
Washington	14	11	—3	1	2	0	0
Waukesha	43	44	1	1	0	0	0
	122	120	—2	6	4	0	5
Second District.							
Kenosha	38	39	1	2	0	0	3
Racine	47	46	—1	3	0	1	3
Walworth	27	15	—12	12	1	1	2
	112	100	—12	17	1	2	8
Third District.							
Columbia	30	28	—2	4	0	0	2
Dane	111	108	—3	8	5	1	10
Green	21	21	0	0	0	0	0
Rock	69	70	1	2	3	0	5
Sauk	15	27	12	0	0	0	11
	246	254	8	14	8	1	28
Fourth District.							
Crawford	6	5	—1	0	1	0	0
Grant	41	40	—1	3	0	1	2
Iowa	10	12	2	1	0	0	3
Lafayette	20	12	—8	8	0	0	0
Richland	19	16	—3	3	0	1	1
	96	85	—11	15	1	2	6
Fifth District.							
Calumet	16	17	1	1	0	0	2
Manitowoc	33	32	—1	3	0	0	2
Ozaukee	10	9	—1	0	1	0	0
Sheboygan	45	40	—5	6	1	0	1
	104	98	—6	10	2	0	5
Sixth District.							
Brown-K'w'ne	40	46	6	2	0	0	7
Door	9	9	0	0	0	0	0
Outagamie	37	34	—3	2	1	0	1
Fond du Lac	58	57	—1	4	0	0	3
Winnebago	58	59	1	0	2	0	4
	202	205	3	8	3	0	15
Seventh District.							
Juneau	12	10	—2	1	1	0	0
La Crosse	47	47	0	1	6	2	9
Monroe	19	18	—1	0	1	0	0
Tre'pl'u J. B.	27	24	—3	2	2	1	1
Vernon	17	16	—1	0	2	1	2
	122	115	—7	4	12	4	12

County Society	1919	1920	Gain + Loss —	Delinquent	Removals	Deaths	New Members
Eighth District.							
Marinette F.	26	20	—6	4	2	1	1
Oconto	9	13	4	1	0	0	4
Shawano	19	19	0	0	1	0	1
	54	52	—2	5	3	1	6
Ninth District.							
Clark	8	12	4	0	0	1	1
Gr'n L. W. A.	25	20	—5	7	1	0	3
Lincoln	15	13	—2	3	0	0	1
Marathon	31	41	10	1	0	0	7
Portage	20	22	2	2	0	0	2
Waupaca	31	32	1	1	0	1	3
Wood	24	23	—1	1	1	0	1
	154	163	9	15	2	2	18
Tenth District.							
Br'n P.W.S.B.	39	37	—2	3	1	0	2
Chippewa	21	20	—1	4	0	0	2
Dunn-Pepin	20	19	—1	2	1	0	2
Eau Claire	38	36	—2	5	1	0	3
Pieree	7	9	2	0	0	0	2
Rusk	8	7	—1	2	0	0	0
St. Croix	17	15	—2	3	0	0	0
	150	143	—7	19	3	0	12
Eleventh District.							
Ashland B. I.	25	20	—5	7	0	0	2
Douglas	40	40	0	1	1	1	3
Langlade	14	14	0	1	1	0	2
Oneida F. V.	13	12	—1	1	1	0	1
Price-Taylor	14	13	—1	3	0	0	1
	106	99	—7	13	3	1	9
Twelfth District.							
Milwaukee	393	391	—2	39	4	1	20
Totals	1861	1825	—36	165	46	13	144

DIGEST OF TABLES.

Three districts show a gain—the ninth, 9; the third, 8; and the sixth, 3.

Nine districts show a loss—the second, 12; the fourth, 11; the seventh, tenth and eleventh, 7; the fifth, 6; and the first, eighth, and twelfth, 2 each.

The twelfth district has 39 delinquents; the second, 17; the tenth, 19; the fourth and ninth, 15; the third, 14; the eleventh, 13; the fifth, 10; the sixth, 8; the first, 6; the eighth, 5; and the seventh, 4.

The third district has 28 new members; the twelfth, 20; the ninth, 18; the sixth, 15; the seventh and tenth, 12; the eleventh, 9; the second, 8; the fourth and eighth, 6; and the first and fifth, 5.

Fifteen counties show a gain; 33 show a loss; and 6 remain the same.

Sauk shows the greatest gain, with a gain of 12; Marathon comes next with a gain of 10; then Brown-Kewaunee with a gain of 6, and Oconto and Clark with a gain of 4 each.

The greatest loss is Walworth County, with a loss of 12; then comes Lafayette County with a loss of 8; then Marinette with 6, and Sheboygan, Green Lake W. A. and Ashland with a loss of 5 each.

Eleven counties have no delinquents. The following counties show the largest number of delinquents: Milwaukee, 39; Walworth, 12; Dane, Lafayette, 8; Green Lake W. A. and Ashland, 7; and Eau Claire, 5.

Forty-three counties report 144 new members. Honors go to Milwaukee which reports 20 new members; Sauk, 11; Dane, 10; La Crosse, 9; Brown-Kewaunee and Marathon with 7 each.

Total membership, Dec. 31, 1917	1,836
Total membership, Dec. 31, 1918	1,834
Total membership, Dec. 31, 1919	1,861
Total membership, Sept. 1, 1920	1,825
Delinquents, Dec. 31, 1918	78
Delinquents, Dec. 31, 1919	78
Delinquents, Sept. 1, 1920	165
Deaths and removals, Dec. 31, 1918	69
Deaths and removals, Dec. 31, 1919	53
Deaths and removals, Sept. 1, 1920	59
New members, Dec. 31, 1918	105
New members, Dec. 31, 1919	113
New members, Sept. 1, 1920	144

The membership report given above is again encouraging. Notwithstanding repeated predictions the last few years that we must inevitably have a falling off in membership, it shows a steady and wholesome growth which is again convincing of the loyalty of the profession to organized medicine. Much of the credit should again be given to the county secretaries and to them we are all indebted, few of us realizing, I fear, the drudgery of their work and the constant effort necessary on their part.

STATE ACTIVITIES.

The handbook mailed to you about two weeks ago contains the reports of the various committees and tells of many of the activities of the society. These reports will be read before this session of the house and do not require other attention.

It is necessary for me, however, to emphasize the greatly increased expenditures of the society, which are almost wholly due to increased publication costs. You will note in the report of the publication committee that it is estimated the increased printing costs of the Journal for the coming year will amount to approximately $3,000. All of the activities of the society practically depend on publicity through printed matter and the increases in the cost of labor, paper and other material has brought our necessary expenditures far above the amount received by a collection of two dollars per year as annual dues for each member.

You will also note in the report of the Committee On Medical Defense that it is estimated the annual cost of defending our members will be about $2.50 per member, as compared with $2.00 per member in the past. Facing these increases in the cost of operation in all our de-

partments, it is apparent that to continue our activities on even the same scale which we have in the past, it will be necessary for us to raise an additional two dollars per member each year. This will give us approximately $3,800 and will require raising the dues 50 per cent, or from four to six dollars. Such a raise in dues compares favorably with other increases in the cost of living and I feel sure our members can make no valid objection to it. The only other solution of the problem would be to suspend the publication of our Journal.

It will be necessary for the present House of Delegates to give this matter careful consideration and if in their opinion the society is to carry on its present activities, even without increases, the raise in dues recommended requires the action and authorization of the House.

You will also note on page 22 of the handbook the recommendation of your Committee On Hospitals that a competent person be secured to make a hospital survey of the state. To follow this recommendation, I fear would require the further raising of dues as the two dollar increase recommended will scarcely more than take care of the increasing costs in publication and the defense of our members in malpractice suits. Several other state societies are, however, charging annual dues ranging from ten to twenty-five dollars per year, and the present house may find it practicable to advance the dues to a point where the activities of the society will not be hampered by an empty treasury. My recommendation, however, would be to advance the dues to a point which will take care of our nominal expenditures for the coming year and the appointment of the council or a special committee to study and advise on the question of a further raise in dues, reporting back to the House at the next annual meeting.

SEVENTY-FIFTH ANNIVERSARY.

The 1921 meeting of the State Medical Society will mark the 75th birthday of the organization. It is only fitting that the occasion be celebrated with a birthday party which will do honor to a society which has accomplished so much for the State of Wisconsin in three-fourths of a century of usefulness. Preparations for the event should be begun immediately after the close of this meeting and the time to begin discussion as to how the event should be celebrated is now.

This subject brings up the question of our relationship to the Tri-State District Medical Society which meets in Waterloo, Iowa, in October of this year. Prior to this year, the Tri-State District Society has met during the month preceding our meeting and it has been felt by the Council and Officers of your Society that a closer affiliation with that organization was impossible as long as their meetings in any way worked to the detriment of our own organization. They will probably come to Wisconsin during the fall of 1921. It is obviously impractical to attempt to hold two large medical meetings in Wisconsin within a few weeks of each other.

Neither Iowa nor Illinois has ever officially recognized this new organization and it is in no way an integral part of the great scheme of organization of the American Medical Association. It is felt that the first allegiance and loyalty of each and every member should be to his county and his state organization. The question arises, however, as to whether it is advisable to work for a joint meeting with this organization in 1921 or to hold our meeting independently, even risking our attendance, due to the fact that the outside organization will no doubt hold a meeting in this state within a few weeks of our own.

This is a question which, I think, properly comes before the House of Delegates and should be decided by them.

HISTORICAL RESEARCH.

The last House of Delegates authorized the publication of a history of Wisconsin medicine and appropriated for the purpose the sum of five hundred dollars. Responsibility for this work has been assumed by Dr. William Thorndyke of Milwaukee and it is hoped the history may be completed and published as a memorial of our 75th anniversary. Dr. Thorndyke will, no doubt, ask the co-operation of many of our members in securing information needed for the work, and I beseech your hearty co-operation in anything he may ask of you.

POSTGRADUATE MEDICAL TEACHING.

You will all recall that at the last Madison meeting of the State Society, a resolution was passed asking the Board of Regents of the University to establish postgraduate medical teaching in connection with the Extension Division of the University of Wisconsin. An appropriation from the legislature was secured to begin this work and it has been carried quite successfully each year.

During 1920, a course of clinics and lectures has been given in Fond du Lac, Oshkosh, Sheboygan, Appleton, Wausau, Superior, Ashland, La Crosse, Eau Claire, Marinette, Stevens Point, and a joint course for the cities of Berlin, Ripon, Princeton and Green Lake. Over three hundred members of the society have attended these courses and with few exceptions have indicated their appreciation of what the university is trying to do, to bring the newer developments of scientific medicine to the man in the field.

In addition to these lecture courses, the Extension Division has collected a complete set of anatomical models and a large number of films and lantern slides on medical and public health subjects, which are now available and will be loaned without cost to physicians, medical societies, nurses' training schools, public health organizations, public schools, etc. I will be glad to furnish anyone interested with a printed list of these models, films and slides.

Courses will again be given during the year 1921 with the old and several new lectures and a complete change of subjects.

Postgraduate teaching has been made available at the request of this organization. It is yours for the asking and with your support, the university is confident that a larger appropriation can be secured to further the splendid start already made.

In closing, let me remind you as I have every year that the activities of the organization are in no way

confined to an annual meeting. The officers and committees which you elect are working in your interests and in the interests of the people of Wisconsin every day of the year. They are *your* officers and *your* committees. This is *your* society and *your* Journal. They are owned and supported by you, so make good use of them. They are always at your service.

And now may I call your attention to the quotation from Roosevelt printed on our program: "Every man owes some of his time to the upbuilding of the profession to which he belongs." Your degree and your membership in this organization brings with it a responsibility in medical affairs, and that responsibility begins with your county society. You owe it your loyalty, your support and your regular attendance. It is unnecessary for me to again remind you that the secretary's office is open 365 days a year and is always at your service.

Respectfully submitted,
ROCK SLEYSTER,
Secretary.

MINUTES OF THE MEETING OF THE COUNCIL.

La Crosse, September 8, 1920.

The council was called to order Wednesday morning, September 8, 1920, with the following in attendance Doctors Dodd, Abraham, Redelings, Dearholt, Smith, Hall, Zierath, Cunningham, Bardeen, Evans, Wilkinson and Sleyster.

On petition of Doctors Bardeen, Greeley and Sheldon of Madison, the following were elected as associate members of the State Medical Society of Wisconsin: H. C. Bradley, Professor of Physiological Chemistry, University of Wisconsin; Paul Clarke, Professor of Bacteriology, University of Wisconsin; W. J. Meek, Professor of Physiology, University of Wisconsin; Dr. Samuel Chase, Madison; W. D. Sullivan, Associate Professor of Anatomy, University of Wisconsin.

The matter of redistricting the state was referred to Doctors Dodd, Abraham and Smith to act as a committee and report back to the House of Delegates.

The question arising regarding the membership of Dr. Henke of La Crosse in the County and State Medical Societies was referred to Dr. Edward Evans with full power to act.

The bill of Attorney Willet M. Spooner for legal opinion in the above matter was approved and ordered paid.

There being no further business, the meeting adjourned.

Respectfully submitted,
ROCK SLEYSTER,
Secretary.

Thursday, September 9, 1920.

The meeting was called to order by the chairman; Doctors Smith, Zierath, Dodd, Cunningham, Hall, Redelings, Abraham, Bardeen and Sleyster being present.

The appropriation of three hundred dollars for the use of the Hospital Committee by the House of Delegates was approved.

There being no further business, the meeting adjourned.

Respectfully submitted,
ROCK SLEYSTER,
Secretary.

GENTIAN VIOLET IN TREATMENT OF PURULENT ARTHRITIS.

According to John W. Churchman, New York (*Journal A. M. A.*, Aug. 28, 1920), the conclusion that pyogenic arthritis, due to Staphylococcus aureus or to pneumococcus, may be cured by the use of gentian violet lavage, and staining is warranted by the facts. It is also clear that normal mobility may be thus retained. Whether the joint in this type of infection should ever be opened, unless the infection has become largely extra-articular, seems more than doubtful. The evidence for these statements, while slender in quantity, is of such quality as to justify them. In one case cited, every control that could be desired was present. There was a granulating wound and a comminuted fracture of the patella. The joint fluid on the admission of the patient was positive bacteriologically. After lavage and staining, the joint fluid ceased to be purulent and became sterile, and clinical symptoms subsided. Inspection of the joint surface at operation demonstrated a normal synovial membrane, and cultures from the point were negative. Healing of the sutured patella and of the skin occured just as if bacteria had never been present, and normal knee motions were retained. Concerning the gonorrheal cases, somewhat more cautious statements must be made. And yet, making due allowance for the mild character of the cases treated (they were, of course, not selected cases), and for the fact that complete bacteriologic proof of cure could not always be obtained, the satisfactory clinical course warrants the belief that lavage and staining offer a method of controlling this disease. Such bacteriologic evidence as it has been possible to obtain strengthen this conviction. Churchman discusses the effect of gentian violet on tissue cells, the fate of the dye in the animal body, applications of selective bacteriolstatic practical bacteriology, the effect of gentian violet on toxins, enzymes and ultramicroscopic infections, and shows that a selective action on closely related bacterial strains exists. In order to determine whether organisms stained with gentian violet were really killed or only injured so that they would not grow on ordinary mediums, the stained organisms were injected into animals. The animals survived. When *B. anthracis* was used, different results were obtained. The control animals all died within forty-eight hours. In the animals receiving stained organisms, life was prolonged, and occasionally the animal survived.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The American Red Cross and the Great War. By Henry P. Davison, Chairman of War Council of American Red Cross. New York: The MacMillan Co. 1920. Price, $2.00.

The Fundamentals of Human Anatomy, Including Its Border Land Districts. By Marsh Pittsman, A. B., M. D. 343 pages. 101 illustrations. St. Louis: C. V. Mosby Co. Price, $4.00.

International Clinics, a Quarterly of Illustrated, Clinical Lectures and Special Articles. Volume II, 30th series. Philadelphia and London: J. B. Lippincott Co. 1920.

Diseases of Children. By John Lovett Morse, A. M., M. D., Professor of Pediatrics, Harvard Medical School. Third edition. W. B. Leonnard Publishing Co., Boston.

Exophthalmic Goiter and Its Nonsurgical Treatment. By Israel Bram, M. D., Instructor in Clinical Medicine, Jefferson Medical College. St. Louis: C. V. Moshy Co. Price, $5.50.

Nursing Mental Diseases. By Harriet Bailey, R. N. 175 pages. New York: The MacMillan Co. 1920.

The Duodenal Tube and Its Possibilities. By Max Einhorn, M. D., New York. Octavo of 122 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $2.50.

An Epitome of Hydrotherapy for Physicians, Architects and Nurses. By Simon Baruch, M. D., LL. D. 12 mo. of 205 pages, illustrated. Philadelphia and London: W. B. Saunders Co. Cloth, $2.00.

Our Nervous Friends. By Robert S. Carroll, M. D. 258 pages. New York: The MacMillan Co. 1919.

Diagnosis and Treatment of Brain Injuries. By Wm. Sharpe, M. D. 759 pages. 232 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920. Cloth, $8.00.

Wounds of the Lung and Pleura. By Morelli. Translated by Drs. Lincoln Davis and Frederick Irving. Boston: W. M. Leonnard, Publisher. 1920.

Human Parasitology, with Notes on Bacteriology, Mycology, Laboratory Diagnosis, Hematology and Serology. By Damaso Rivas, M. D., Ph. D., University of Pennsylvania. Octavo volume, 715 pages. 422 illustrations. 18 plates. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $8.00 net.

Advanced Lessons in Practical Physiology. For Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University. Octavo of 238 pages. 123 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $4.00 net.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl, M. D. and A. J. Blaivis, M. D. Second edition. 75 illustrations. 4 colored plates. St. Louis: The C. V. Moshy Co. 1920.

Sane Sex Life and Sane Sex Living. By H. W. Long, M. D. 151 pages. Boston: Richard G. Badger, The Gorham Press.

A General Introduction to Psycho-Analysis. By Prof. Sigmund Freud, LL. D. Authorized translation by G. Stanley Hall. President of Clark University. New York: Boni and Liveright. 1920.

The Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M. D. Second edition, revised. 290 pages. 123 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Simplified Infant Feeding. By Roger H. Dennett, B. Sc., M. D. Second edition. 381 pages. 14 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920.

Epidemic Encephalitis. By Frederick Tillemey, M. D., Ph. D., and Hubert S. Howe, A. M., M. D. New York: Paul B. Hoeher. Illustrated. Cloth, $3.50 net.

General and Dental Pathology with Special Reference to Etiology and Pathologic Anatomy. A treatise for Students and Practitioners by Julio Endelman, M. S., D. D. S., Professor of Special Dental Pathology, University of Southern California, and A. F. Wagner, A. M., M. D., Professor of General Pathology, University of Southern California. 440 illustrations, four colored plates. St. Louis: C. V. Mosby Co.

BOOK REVIEWS

International Clinics, a quarterly of illustrated, clinical lectures and special articles. Volume II, 30th series. J. B. Lippincott Co., Philadelphia. 1920.

This series of International Clinics has been running for thirty years and 120 volumes have been issued. Ordinarily, established as it is, little attention was paid to it in the review departments of our journals other than an announcement of the new volumes as they appear.

A new department in this volume on "Industrial Medicine" is worthy of attention, and 32 pages are devoted to an industrial surgical clinic by Paul Magnuson, M. D., and John Colter, M. D., the former medical director of the Illinois Industrial Commission.

The volume is, as usual, well printed and well illustrated, and an article on "The Skin Lesions of Syphilis," by Loyd Thompson, M. D., editor of the American Journal of Syphilis, is well worth the price of the work. Other sections of the present volume cover neurology, pediatrics, obstetrics, surgery and medicine.

The Fundamentals of Human Anatomy, Including Its Border Land Districts. By Marsh Pittsman, A. B., M. D. 343 pages, 101 illustrations. C. V. Mosby Co., St. Louis. Price, $4.00.

This is an attempt from the viewpoint of the practitioner to improve the anatomic knowledge of the general practitioner. It is generally recognized that the rank and file of practitioners in a few years forget much of the anatomy taught in college because much of it is

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useless from a practical point of view. On the other hand, much of this knowledge should be retained as an aid in all branches of medicine, and a knowledge of applied anatomy is very necessary to much of our diagnosis.

The author has succeeded in incorporating in a well illustrated work of 343 pages the essentials of every day anatomy and the work just published will prove of special value to the practitioner who wishes to "brush up."

The American Red Cross and the Great War. By Henry P. Davison. Illustrated. The MacMillan Company, New York. 1920. Price, $2.00.

No chronicle of the American Red Cross during the World War can prove as authoritative or as popular as this little work by Henry P. Davison, chairman of the War Council of the American Red Cross. Everyone by contributing his mite to the aid of this great work is a stockholder in this wonderful institution, can take a share in the pride which naturally goes with the greatest humanitarian work ever accomplished, and should have an interest in what has been done during the past six years.

Mr. Davison's work is interestingly written and no one will regret the purchase of this book. The author's royalties go to the Red Cross.

Exophalmic Goiter and Its Nonsurgical Treatment. By Israel Bram, M. D. Instructor in clinical medicine, Jefferson Medical College, Philadelphia, Pa.; physician on visiting staff of Philadelphia General Hospital; member of the Society for Study of Internal Secretions, etc. C. V. Mosby & Co., St. Louis, Mo., Publishers. Price, $5.50.

The very title of this text will at once attract the attention of any physician or surgeon who has seen any large number of exophthalmic goiter patients. So it was with me, and a careful perusal of its contents was made in order to ascertain if Dr. Bram had anything new in the way of medical management of this most perplexing and serious disease.

It is quite evident that Dr. Bram started out to prove that exophthalmic goiter was distinctly not a surgical problem or one amenable to surgical interference. He mentions in painful detail all the terrible complications and sequelae of surgical practice in exophthalmic goiter. One would infer from the number of times these have been repeated in his book that they were the customary and usual results to be expected. If this were true in Dr. Bram's experience, his experience is very unique and novel and I know that it has not been the case in the large percentage of cases which are treated surgically every year in the city of Philadelphia where he practices.

It is hardly necessary to go into the chapters in detail, suffice it to say that the treatise, in my opinion, is not a fair one on the subject of exophthalmic goiter and if there were any great danger of this book being taken too seriously it would do a great deal of harm because physicians would temporize with their cases of exophthalmic goiter medically over a longer period of time during which damage to the circulatory and the parenchymatous organs would be very extensive.

I am tempted, however, to refer to one of the author's case histories which is cited as an example in which the patient was never seen nor examined by the doctor, was prescribed for by the doctor, and later from the reports of either the patient or the patient's husband, the doctor pronounced the patient as cured.

—*F. B. M.*

The Treatment of Wounds of Lung and Pleura, based on a study of the Mechanics and Physiology of the Thorax. Artificial Pneumothorax — Thoracentesis — Treatment of Empyema. By Professor Eugenio Morelli, Assistant in the Medical Clinic of the Royal University of Pavia, Maggiore Medico, Field Hospital No. 79. Translated from the Italian by Lincoln Davis, formerly Lieutenant-Colonel, M. C. U. S. Army, and Frederick C. Irving, formerly Major, M. C. U. S. Army. W. M. Leonard, Boston, publisher.

This book is a very commendable treatise on a most important subject that fortunately has been well written on by a number of competent men as an outgrowth of their experiences during the last war.

It will be found of considerable interest and value to surgeons and internists in helping to solve the question of treatment of wounds to the lung and pleura.

—*F. B. M.*

IDEALS OF TREATMENT.

In an address delivered at the 15th Anniversary of the founding of the Gaylord Farm Sanatorium, Wallingford, Conn., S. Adolphus Knopf discusses ideals that should animate the physician, nurse, patient and sanatorium. The address is a summary of our better present day method of the treatment of tuberculosis.

Knopf, S. Adolphus: Ideals in the Treatment of Tuberculosis. The Ideal Sanatorium, the Ideal Physician, the Ideal Nurse, and the Ideal Patient. American Review of Tuberculosis, April 1920, Vol. IV, No. 2.

RED CROSS EMERGENCY SURGICAL DRESSINGS PARCEL.

A standard emergency surgical dressings parcel, to be produced by Red Cross chapters, and to be kept by them in quantities sufficient to meet readily whatever emergencies each chapter feels may be expected. has been adopted by the American Red Cross. It has been officially endorsed by the Surgeon General of the Army, the American College of Surgeons, the Surgical Section of the American Medical Association and the Conference Board of Physicians in Industrial Practice.

A manual of instructions for the preparation and production of the parcels has been issued to the chapters, and supplies will also be sent them.

The parcel is wrapped in heavy brown paper, sterilized and paraffined, and contains 10 gauze compresses, 1 absorbent pad, 1 rolled wadding bandage, 1 muslin bandage, 1 gauze bandage, 1 triangular bandage and safety pin.

The Wisconsin Medical Journal

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ORIGINAL ARTICLES

CLINICAL ASPECTS OF PNEUMONIA.*

BY LOUIS F. JERMAIN, M. D.,

MILWAUKEE.

Disease is never a fixed entity, but is the reaction of the body under conditions of varying resistance to an infection of varying virulence.

Resistance is influenced by heredity, environment, previous disease and protective inoculations.

The virulence of pathogenic microorganisms is influenced by climatic conditions, temperature, the character of the host, concentration of carriers, condition of passage and the presence of large numbers of susceptible individuals.

It has also been suggested that microorganisms have cycles of infective activity which follow periods of rest. This explains in a measure the epidemic occurrence of disease.

Variations in the clinical manifestations of disease may also be the result of infection by different strains, or types of the same microorganism, such as type I, II, III, IV of pneumococci and the occurrence of secondary infections, such as pneumococcus or streptococcus infection in measles, scarlet fever, influenza, etc.

Such factors not only influence greatly the severity of the clinical manifestations, but may lead to a definite "change of type" of disease. (Rolleston[1].)

Perhaps the most remarkable example of a "change of type" of disease ever recorded was the change to the type of pneumonia which occurred and devastated the world in the years 1918-1919. A consideration, therefore, of the symptomatology of pneumonia which would not include the broncho-pneumonia of the recent epidemic would be incomplete and unsatisfactory, particularly since a recurrence of this same type can be confidently expected the coming winter.

My own experience with pneumonia during this summer does not indicate that subsidence of the influenza epidemic has resulted in a reversion to the classical lobar type of the disease.

ACUTE LOBAR PNEUMONIA.

This type of pneumonia is usually readily recognized clinically by its typical general course and characteristic physical signs. The disease usually sets in quite abruptly, generally with a rigor, occasionally lasting an hour or more. During the chill there may be delirium or torpor, anorexia and vomiting and intense thoracic pain increased by respiratory effort. Immediately following the chill the temperature is found elevated to 104 or 105 degrees F. The respirations are rapid, superficial and frequently interrupted by a dry, hacking cough. The patient appears ill, his expression is anxious, the skin is flushed or cyanotic, the eyes are bright and glisten, there is frequently herpes on the lips, the pulse is accelerated, the nostrils dilate with each breath and often a characteristic flush of the cheek on the affected side is observed.

After twenty-four to seventy-two hours the thoracic pain diminishes in intensity, the cough becomes productive and the characteristic rusty, prune juice sputum appears.

In mild cases these symptoms persist for a period varying from six to ten days when a definite crisis occurs; the temperature falls suddenly, reaching normal in ten to twenty-four hours; respiration becomes slower and less labored; the sensorium clears; the pulse rate becomes normal, or nearly normal and a state of comparative comfort displaces one of extreme anxiety and severe illness.

During the crisis the entire body may be bathed in a copious sweat; there may be severe diarrhea and collapse followed by subnormal temperature.

In fatal cases the crisis often fails to occur, dyspnoea and cyanosis become increased, the pulse becomes more rapid and weaker and although the temperature may fall to normal, improvement does not follow and the patient goes into collapse and dies.

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*Read before the State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

([1]Rolleston, Sir Humphrey, Jour. A. M. A., May 29, 1920, p. 1495.)

A pseudo-crisis is an abrupt lowering of temperature, occurring as a rule several days before the true crisis. It is distinguished from the true crisis by less marked slowing of the pulse rate, the temperature never reaches the normal point and soon rises again to its former height. Pseudo-crises occur in from ten to fifteen per cent of all cases of pneumonia.

Thoracic pain is the most constant local symptom of lobar pneumonia. It is often the earliest one antedating the chill by several hours. The pain is typical, variously described as stabbing, lancinating or a typical "stitch in the side". In children, the aged, alcoholic and the delirious it is often absent. It is often referred to the upper, or lower quadrant of the abdomen, and when right sided may lead to exasperating errors in diagnosis. Referred abdominal pain and abdominal rigidity is particularly apt to occur in children and in pneumonias associated with diaphragmatic pleurisy.

Headache, photophobia, vomiting, retraction of the head, Kernig's, Babinski's and Brudzinski's signs occur. This may be the result of actual invasion of the meninges, but quite as often are toxic nervous manifestations (Meningismus) which disappear immediately after the crisis. They are most often present in the apical pneumonias of childhood.

The sputum is characteristic. At first it is rusty, transparent, homogenous and tenacious, adhering to the lips and the cup. It may be yellow, green or orange in color depending upon the amount of oxidation the hemoglobin derivatives have undergone.

About the time of the crisis it becomes more abundant and mucopurulent. It loses its rusty bloody appearance and its tenacity.

The expectoration of considerable amounts of blood usually indicates some complication such as chronic passive congestion, or pulmonary infarct, or a pneumonia of the tuberculous type.

Cyanosis is seldom intense. Early and marked cyanosis is a grave prognostic sign and indicates a secondary pneumonia, or some cardiac complication.

Disturbance of the normal pulse-respiration ratio is an important symptom of pneumonia. The ration may be 3-1; 2-1; or even 1-1.

The blood pressure is frequently found lowered, but not invariably so. Normal pressures may be recorded during the entire course of the disease. Gibson's rule that if the systolic pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, the prognosis is good is no longer tenable. An abrupt and decided fall of systolic pressure, however, is always of grave portent.

Soft blowing systolic murmurs are common. If unassociated with cardiac enlargement and transmitted over the body of the heart, but not laterally, they should be considered functional due to cardiac relaxation or altered pressure in the pulmonary circuit and their disappearance during the convalescence predicted.

The red cell count is usually normal during the course of the disease. A moderate polycythemia, the result of blood concentration, may be recorded. Moderate secondary anemia may develop.

The white cell count is found increased from the onset.

Chatard[2] in a study of 582 cases of pneumonia at the Johns Hopkins Hospital found that about one-half of the patients had a leucocyte count of from 15,000 to 35,000 and about one-third a count of from 20,000 to 30,000. A leucocyte count of less than 10,000 in lobar pneumonia indicates a mild infection, a severe infection with poor resistance, or a complicated infection such as typhoid or malaria.

Low and very high leucocyte counts are of the gravest import. An average count with a gradual rise during the course indicates good resistance and a good prognosis.

There is a relative and an absolute increase in the polymorphonuclear elements, the count ranging from 80 to 90%. The leucocyte count gradually diminishes after the crisis. Persistence of a high leucocyte count after the crisis indicates a complication such as empyema or otitis media. Eosinophiles are decreased and myelocytes often increased.

The oxygen content of the blood has been found by Peabody[3] to be within the normal limits in all uncomplicated cases. "In the terminal stage of a fatal case of pneumonia in which death does not occur with great suddenness there is often a progressive diminution in the oxygen content of the blood. Synchronous with this is a progressive decrease in the oxygen combining capacity of the blood. These changes are usually seen in patients

(2Chatard, Johns Hopkins Hospital Rep., 1910, XV, 89.)

(3Peabody, Jour. Ex. Med., 1913, XVIII, 7.)

in whom an intense bacteremia has developed and are analogous to those found in the arterial blood of infected rabbits and to those resulting from the growth of the pneumococcus in blood in vitro. In all three conditions there is probably a change of oxyhaemoglobin to methemoglobin."

The urine is scanty, high colored and contains a trace of albumin and often casts. The excretion of chlorides is often completely suppressed.

Dochez and Avery[4] have demonstrated in the urine of pneumonia patients a specific substance giving a precipitin reaction with antipneumococcic serum corresponding in type to the infecting organism. It is usually present when there is a pneumococcus bacteremia and the amount of the substance is said to be an index to the severity of the disease.

Physical Signs: Careful inspection is of the greatest value, specially in the early stages. The anxious expression, the rapid shallow breathing, flushed cheeks, moving alae-nasae, limited expansion of the affected side, altered Litten's sign and the position of the patient are signs which appear early in the course of the disease and careful observation of them enables one to make a diagnosis at a time when the more positive signs due to consolidation of lung tissue are still absent.

During the stage of engorgement vocal fremitus is often diminished, the normal pulmonary resonance is replaced by a note distinctly tympanitic in character, the breath sounds are diminished or suppressed and the characteristic crepitant rale of Laenec, the so-called "crepitatio indux" appears. During the stage of consolidation the percussion note is dull, a zone of tympany at the upper level of dullness (Skoda's resonance) is often present and there is hyperresonance over the uninvolved portions. Spoken and whispered voice sounds are loudly heard, becoming distinctly bronchophonic or egophonic as consolidation progresses.

With increasing consolidation the expiratory sound becomes lengthened and soon the breath sound becomes distinctly bronchial, often decidedly tracheal in pitch and intensity. The crepitant rale disappears when consolidation is complete to return again during resolution "crepitatio redux."

Resolution is indicated by the reappearance of crepitation, the tubular character of the breath sound becomes less marked and with diminishing dulness on percussion the coarse, moist subcrepitant rales appear.

Interstitial Broncho-pneumonia:[5] A type of pneumonia which appeared in epidemic form in cantonments during the years 1918-1919 and with great rapidity spread to the civil population of practically the entire world. It was characterized chiefly by its development secondary to measles and so-called influenza.

Its incidence, pathology and clinical course was influenced by the specific etiologic factor, by race, environment, location and the primary infection. To the Clinicians and Epidemiologists, accustomed as they were to the classical lobar type of pneumonia with a moderately low mortality and a course of considerable definiteness, the sudden change to this frightfully fatal type of disease with its indefinite course and numerous complications was baffling in the extreme. The robust, able-bodied, middle aged, young men and women, the flower of the nation, were the particular prey of this dread malady. Cheerful, happy and unconscious of the lurking enemy they were stricken and in an amazingly brief period of time were prostrate and at death's door.

The unusual incidence of this disease and its high rate of mortality among a class of individuals commonly most resistent to infection has not as yet received satisfactory explanation.

Many of these cases began with most trival subjective symptoms and the physical signs were exceedingly difficult of interpretation, especially in the early stages.

The most striking clinical features were:

First: The rapid progression of the disease to a fatal issue;

Second: A condition of euphoria even in the desperately ill;

Third: A peculiarly striking and unusual cyanosis without alarming cardio-respiratory disturbance;

Fourth: Tendency to hemorrhage from mucous surfaces;

Fifth: Absence of leucocytosis or actual leucopenia;

Sixth: Slow heart rate until shortly before death;

Seventh: Frequency of grave mental and nervous disturbances;

([4]Dochez & Avery, Jour. Ex. Med., 1917, XXVI, 477.)

([5]Cole & MacCallum. Jour. A. M. A., April 20, 1918, p. 1146.)

Eighth: The unusual virulence of the disease in pregnant women;

Ninth: Frequency and gravity of purulent pleurisies;

Tenth: Physical signs that developed rather slowly and imperfectly in many cases, but as a rule were quite characteristic;

Eleventh: Common termination with symptoms and signs of pulmonary edema.

Aside from the plagues of old such rapidly fatal infection has rarely been observed. At the height of the epidemic it was not at all uncommon to see young, robust individuals in apparently the best of health succumb within forty-eight hours from this disease.

A peculiar feature of the infection was the unusual sense of well being that accompanied it. Men and women suffering from temperatures ranging from 103 to 105° F. often with sputum already bloody were found at work, or consulting their physician in his office. This condition of euphoria as a rule persisted until death. One could visit hundreds of these patients in the hospital wards without eliciting a single complaint of ill feeling from any of them. The usual answer was, "Oh, I feel fine."

Practically all severe cases showed marked cyanosis. It was not the dusky, pallid blueness preceding death from lobar pneumonia, or $C.O.^2$ accumulation, but a deep blue or violet color suggesting methemoglobinemia. Cyanosis was frequently present at the very onset. It gradually deepened as the disease progressed and was not influenced by the administration of oxygen.

Epistaxis was a common feature and often blood was seen to gush from the patient's mouth and nose in considerable quantities. More often there was a constant flow of blood from the nasal and oral cavities. The expectoration was not blood tinged or prune juice as in lobar pneumonia, but was distinctly hemorrhagic, considerable quantities of almost pure blood being expectorated. Female patients frequently suffered from uterine and vaginal hemorrhages.

There was rarely leucocytosis, leucocyte counts of from two to six thousand were the rule. The presence of complications such as empyema seemed to influence the leucocyte count but little. The leucocyte count in no manner was indicative of the prognosis. A gradual rise in the leucocyte count at times, however, seemed to presage improvement.

In uncomplicated cases the pulse rate was invariably slow, often remaining below 100 until an hour or two before death. Systolic and diastolic pressures were low and in fatal cases often sank with great rapidity.

All types of mental and nervous disturbances were encountered during the course of the disease and as sequelae to the same.

The virulence of the disease in pregnant and parturient women was especially striking as was the frequency and peculiar gravity of the complicating empyemas. Death from empyema after efficient drainage was rare until this epidemic when it was quite common.

The physical signs were frequently exceedingly difficult of interpretation, especially in the early stages. The characteristic signs often did not develop until shortly before death. In many cases the presence of pneumonia was not determined by physical examination and only by post mortem was the true nature of the pulmonary changes disclosed.

The usual and characteristic findings were marked dulness on percussion in back on either side of spinal column in a location corresponding to lung hilii. Usually as soon as an impairment of resonance could be demonstrated there was present tubular breathing, frequently indistinct and distant,, but occasionally exquisitely loud and high pitched. Subcrepitant rales were frequently present for some time before either dulness or bronchial breathing could be elicited and continued to be heard during the entire active course of the illness and sometimes for weeks and months afterward.

This type of pneumonia was especially distinguishable from the lobar type in the common presence of evidence of moisture in the lungs during the entire course of the disease. Physical evidence of pulmonary edema both local and general was a constant finding; in fact many of these patients literally drowned in their own secretions.

ABDOMINAL SYMPTOMS IN PNEUMONIA.*

BY F. GREGORY CONNELL, M. D., F. A. C. S.,
OSHKOSH.

It is not my intention to speak of that type of pneumonia (usually influenzal or streptococcal) in which lung pathology is but an incident in a general toxemia or septicoemia—nor of those unusual cases in which there is an actual peritonitis in conjunction with pneumonia.

Musser and Norris (Mod. Med. Vol. 2, p. 607) quote Lenormant and Leceue that there were but 74 cases of pneumococcic peritonitis on record. Musser and Norris collected peritonitis 28 times in 8,132 pneumonias or 0.34%. But in pneumonia autopsies the percentage was much higher, 21 times in 971 cases, 2.6%. Longcope also found the percentage much higher, 5 times in 23 consecutive pneumonia autopsies.

Pneumococcic peritonitis differs in no respect from the ordinary type of peritonitis, but is with difficulty differentiated from the reflex abdominal pain that occurs not infrequently in pneumonia in which there is no peritoneal lesion.

In the typical case of lobar pneumonia one may find abdominal symptoms (pain rarely, vomiting more frequent) as prodromata, but more frequently in the case presenting abdominal symptoms, there is sudden pain and tenderness that is sometimes mistaken for an acute abdominal emergency.

The more usual case coming under the category is that in which the pneumonia is not suspected and at operation the abdomen is found to be normal. An innocent appendix is often removed, and the thoracic symptoms develop within the next day or so.

Such cases are not frequently reported, but are without doubt much more frequent than the literature indicates.

The general statement is frequent that pneumonia may, in its early stages be mistaken for acute abdominal complaints, but detailed reports of such instances are rarely met with.

Chatard (Osler Mod. Med., Vol. 2, p. 565) found abdominal pain 51 times in 658 pneumonia patients (7.7%).

Some cases of post operative pneumonia, after operation for acute appendicitis, in which the operative findings are not quite characteristic might possibly have been cases of obscure and undetected pneumonia before the operation.

Griffith collected 34 cases from the literature and reported 8 additional cases.

Janeway, Frantzel, Cozolino, Barnard, Osler, Hampelin, Brown, Richardson, Massalong, Lovett, Ginnon, Comby and Ziebruski Rodman and McFarland are all (14) quoted by Behan (Pain (Appleton), 1914, p. 798).

Behan, 1914, collected 14 such cases from the literature.

Cutler and Hunt (Archives of Surgery, Vol. 1, No. 1, July, 1920, p. 147) in a most exhaustive article entitled "Post-Operative Complications" found in 156 cases of post-operative pneumonia at the Peter Bent Brigham Hospital that in two instances a mistaken diagnosis of appendicitis was made instead of Lobar Pneumonia.

I have personally operated upon one such case under the diagnosis of appendicitis and am familiar with two other instances of such an error in diagnosis.

In addition to the above I have recently met with a case of recognized pneumonia in which the symptoms and physical findings indicated an acute cholecystitis as a complication, but in which it was thought by three consultants and myself that the greatly distended gall bladder could be plainly outlined.

In the opinion of all it was thought desirable to drain this gall bladder under local anaesthesia. At such an operation the gall bladder and peritoneum were found to be normal.

In addition to the above cases, I have records of four cases which were admitted to the hospital with a diagnosis of appendicitis, but were not operated upon and proved to be pneumonia (Dr. Danforth, Omro, Dr. Andrews, Dr. Hugo, Dr. Ott, Dale).

And one case rather interesting in that the only complaint in a child 6 years old was abdominal pain centrally located, with high temperature and prostration—a cause for the pain was not apparent and after 7 days a patch of pneumonia was demonstrable in the right base.

On the day following this discovery, a crisis developed and the symptoms entirely disappeared.

We have so many times found pathology in direct relationship with pain and tenderness that cases of this sort are considerable of a shock, a source of chagrin to the physician; and because of

*Read before the State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

misdirected treatment are both directly and indirectly serious and dangerous matters.

The explanation of this referred or transferred pain is that given by Henry Head.

Head explains that "the manner of transference of pain sensation is this: that the stimulus affects the peripheral distribution of a nerve distributed to a viscus, and that this stimulus is carried to the cord and enters the sympathetic system through the sensory root posterior to the ganglion. In the cord the nerve cells of these fibers (from the sympathetic) come into intimate contact with the cells of the fibers from the peripheral sensory system, and incite them to reaction, so that stimuli occur, and are transmitted to the brain, so that the brain centers perceive them as coming from the peripheral distribution of these same somatic or body nerves."

Head has laid down a law particularly applicable to this state, namely, "that when a painful stimulus is applied to a part of low sensibility, in close central connection with a part of much greater sensibility, the pain produced is felt in the part of higher sensibility, rather than in that of lower sensibility to which the stimulus is actually applied."

Mackenzie working independently arrived at very similar conclusions relative to visceral pain.

He cites a case that might serve as an example of this thoracico-abdominal reflex.

Pain in the epigastrium persisting for a number of days after passage of a gall stone and its recovery in stool. The explanation is, "here there seems little doubt that the stimulation, set up by the ingestion of food, which passes to the spinal cord normally unperceived, reached that portion of the cord which had been abnormally excited by the gall stone colic, and had hypersensitized the centers of the cutaneous nerves for pain which supply the epigastric region."

Dr. Carmalt Jones (Quart. Jour. of Med., Apr. 1920, p. 242) "Observations on Segmental Hyperalgesia in Visceral Lesions" states:

"Every typical segment of the brain and spinal cord possesses on each side two sets of fibers—an afferent and efferent somatic, and an afferent and efferent splanchnic. The afferent somatic fibers convey impulses from the skin, and doubtless also from muscles and joints, and impulses to appropriate action are sent down the somatic efferent nerves to the skeletal muscles. The afferent impulses are, or may be, consciously felt, and the action taken is, or may be, voluntary.

"The afferent splanchnic nerves convey impulses from the viscera, and impulses are carried down the efferent splanchnic nerves which induce movement in the visceral muscles, and it may be assumed that the movements are made in response to the impulses transmitted by the afferent nerves. The splanchnic arrangement differs from the somatic in the facts that the splanchnic afferent impulses are not realized in consciousness, and the action taken is involuntary; the state of a viscus cannot be realized from any conscious sensation nor can contraction of any visceral muscle be started or controlled at will. From this it follows that the viscera are not sensitive as the skin is sensitive, and it is stated that if the viscera are exposed by operation without an anaesthetic, they can be handled without the patient being aware that they are being touched. Further, visceral pain is not felt in the organ itself but in the distribution of the corresponding somatic afferent nerve."

The abdominal pain under discussion is a reflected abdominal pain (Behan, p. 392) and they are the result of a "stimulus applied either to a sympathetic or to a cerebrospinal nerve. This stimulus is carried to the posterior horns of the cord, and actively stimulates other associated sensory fibers. The stimulus is then perceived as pain, and the sensation is referred to the peripheral distribution of the stimulated sensory neurons, and thus it occurs that the peripheral distribution of the pain may be in an altogether different region from that in which the stimulus originated."

"It should always be borne in mind that it is immaterial what part of a nerve-circuit is affected; the pain will always be interpreted as coming from the peripheral distribution of the nerve fibers which are involved."

Hertz (1911) emphasizes the necessity for a special or adequate stimulus which in the case of the gastro intestinal tract is distention. Even with adequate stimulation the intestines are much less sensitive than is the skin to its adequate pain stimuli. Irritation of the terminal branch of any nerve may be referred to other nerves (Metzer, Law of Contrary Innervation).

The nerves of the abdominal wall are the anterior divisions of the lower six intercostals, which also supply part of the parietal and dia-

phragmatic pleura (the 12th dorsal is larger and communicates with the ileo hypogastric branch of the 1st lumbar).

The twelfth dorsal nerve leaves the spinal canal below the last dorsal vertebra and rib, running at first behind the psoas muscle and in front of the quadratus lumborum. It pierces the transversalis and passes between it and the internal oblique two inches above the iliac spine in a downward and inward direction to the edge of the rectus where it pierces the sheath and runs behind it to about the middle of the belly of the muscle. It pierces the muscle and the anterior rectus sheath, some branches becoming cutaneous and supplying the skin below the umbilicus. It also supplies branches to the transversalis, the internal and external oblique, the rectus and the pyramidalis muscles.

The hypogastric branch of the first lumbar nerve runs between the transversalis and internal oblique about an inch above the crest of the ilium, it continues downward and inward parallel to the twelfth dorsal, pierces the internal oblique about an inch in front of the anterior superior iliac spine and lies about half an inch above the inguinal canal under the aponeurosis of the external oblique, pierces the aponeurosis of the external oblique an inch and a half above the external inguinal ring, becomes cutaneous and supplies the skin above the pubes below the level of the twelfth dorsal. It gives off branches to the transversalis, oblique, and pyramidalis muscles.

Head states that even without inflammation of the pleural, e. g., central pneumonia, bronchopneumonia, bronchitis or tuberculosis, that abdominal pain may result.

The lung being supplied by the 7th, 8th and 9th dorsal branches, irritation arising from a small pulmonary focus may be carried to the posterior root ganglion and in turn to epigastric and hypogastric region as localized pain and tenderness.

Diaphragmatic Pleurisy:

Capps (Am. J. Med. Sci., Mch. 1916, p. 333) has found that the visceral pleura is not sensitive to pressure or scratching of a wire, that such irritation of the parietal pleura produced local pain; but that irritation of the outer margin of the diaphragmatic pleura, supplied by the lower six intercostal nerves, was followed by reflex pain in the hypochondrium and often in the abdominal wall as far as the navel or even the groin; and when its central portion was irritated the pain was referred by the phrenic, the 3rd and 4th cervical nerves, to the neck.

Capps presents a study of 61 cases of diaphragmatic pleurisy; referred abdominal pain occurred in 54 cases, there was referred neck pain in 33 cases or about 50%.

The following 23 mistaken diagnoses were made in the series of 61 cases of diaphragmatic pleurisy:

9 Appendicitis, 2%.
6 Cholecystitis, 2%.
2 Perforation of Ulcer of Stomach, 1%.
2 Liver Abscess, 1%.
1 Peritonitis.
1 Renal Calculus.
1 Infectious Lumbago.
1 Brachial Neuritis.

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Capps' conclusions are as follows:

The skin and muscles of the abdomen are more sensitive to pain in referred pleural pain than in visceral disease. This is best elicited by pinching of the wall and scratching of the skin.

The cutaneous reflexes are more lively in referred pain than in visceral disease as a rule.

Deep pressure with the flat surface of the fingers is well borne in referred diaphragmatic pleural pain, while it elicits a dull, deep pain when applied over an inflamed organ, e. g., an appendix or gall-bladder.

Evidences of respiratory infection are usually present in diaphragmatic pleurisy, such as a cough, expectoration, herpes of lips, sore throat, high leucocytosis, rapid respiration, etc.

Appearance of a sharp, definitely localized pain in the neck on the same side as the abdominal pain often reveals the true condition, since it points to irritation of the phrenic nerve.

The referred pain in the neck and abdomen are usually induced or aggravated, by cough and deep inspiration.

Nausea and vomiting are more constant in visceral abdominal inflammation, but may occur and be very pronounced also in diaphragmatic pleurisy.

Hiccough is not a common symptom in diaphragmatic pleurisy contrary to the common belief. It was present only five times in 61 cases. It is more often seen in visceral disease of the abdomen than diaphragmatic pleurisy.

In a recent personal case of paracinesis cardii, this finding was corroborated. As the fluid was aspirated the tip of the needle was allowed to come

in contact with the diaphragm causing complaint of pain in the left neck. (Anne K.)

One of the reasons for this confusion between pneumonia and acute abdominal conditions is that often during the first 24 hours of pneumonia the pulmonary symptoms and physical signs in the chest may be entirely absent. Pneumonia of the right lobe can, especially in children, by irritating the tenth, eleventh and twelfth intercostal nerves may produce pain, rigidity and tenderness in the right side of the abdomen, which accompanied by the fever, leucocytosis, vomiting and prostration may look exactly like an acute appendicitis.

In pneumonia the disease may be ushered in with a *sudden* markedly high temperature, rapid respiration, the chill may be absent, with the abdominal tenderness characteristic, usually situated higher and the skin over the painful area to be very hypersensitive with deep pressure not so painful.

It has been claimed that in pneumonia there is slight reduction in the rigidity of the abdominal wall at the beginning of inspiration, which is absent with abdominal inflammation. (This I have personally been unable to find except in one case C. S.)

On the other hand peritonitis may cause diminution of the respiratory excursion and therefore in the character of the breath sounds of the right lower lobe; in this way tending to make such a differentiation still more difficult.

The Roentgen Ray will be found of great benefit in such cases as it will often reveal a pneumonic area before the physical signs may be demonstrated.

The important point is to *think* of the possibility of pneumonia giving rise to abdominal symptoms: notably in children with rapid respiration, dilatation of the alæ nasi and high temperature, this will call for a careful chest examination, not confined to its anterior aspect, and in most cases settles the diagnosis, and which emphasizes the advisability of not making the dividing line between the various specialties too distinct.

STUDIES IN TYPHOID FEVER.

BY EDWIN HENES, JR., A. B., M. D., F. A. C. P.,

MILWAUKEE.

During the summer, fall and winter of 1918, while on duty at U. S. Army General Hospital No. 12, Biltmore, N. C., a most unusual opportunity was afforded to study typhoid fever in all its clinical aspects, and especially to carry out some interesting and important researches along lines that had previously received very little attention.

It happened that an epidemic of typhoid fever occurred in July, 1918, among the interned enemy alien Germans at the Detention Camp, Hot Springs, N. C. The disease spread rather alarmingly, and because of inadequate hospital facilities at the camp, the patients were transferred to the Army hospital at Biltmore. They were received in three groups, totaling 183, of whom 177 proved to be cases of typhoid, and manifested all phases of the disease.

At the request of the Surgeon General of the Army, an elaborate and detailed report of the work done during a year of observation and study was prepared by the author. This report has been completed and only recently was submitted to the Surgeon General. It is to appear in *The Medical and Surgical History of the World War,* now in the process of preparation.

It is my purpose to present here, briefly and with the minimum of discussion, a general summary of our clinical observations and of our researches, and of the conclusions based on those observations and researches.

AGE.

All patients were males and ranged from 18 to 65 years of age. Twenty-six per cent of all the cases were between the ages of 30-35 years, while 73.5% of the entire group were between the ages of 20-40 years.

PROPHYLACTIC ANTITYPHOID INOCULATION.

From statements made by the patients on admission to the hospital at Biltmore, it is apparent that the first cases suggestive of typhoid fever at Hot Springs developed about the first of July, 1918. Prophylactic inoculation was not at once resorted to. After the disease was recognized it seems that the interned aliens were offered the protection of inoculation. Later, when the disease began to spread, compulsory vaccination was

resorted to. One hundred and nine cases received one inoculation; twenty-four cases received two inoculations, and six cases received three inoculations. The regulation triple vaccine used in the army at that time was given and at weekly intervals.

It seems that inoculations were discontinued in the individual cases following the onset of symptoms suggestive of typhoid fever. We are led to believe that the great majority of cases were inoculated after exposure and infection, and during the incubation period of the disease. We were unable to determine whether the inoculation had shortened the incubation period, thereby precipitating the onset.

Most of these patients had received prophylactic inoculation in previous years, while serving in the German army, navy and merchant marine.

Prophylactic anti-typhoid inoculation very definitely influenced the severity of the disease. Three inoculations were more effectual than two, two inoculations were more effectual than one, and one inoculation was more effectual than none at all, in lessening the severity of the disease.

Inoculations given after the onset were more effectual than those given at the onset, and those given at the onset were more effectual than those given before the onset, in lessening the severity of the disease.

It is generally recognized that prophylactic anti-typhoid inoculation is not an absolute protection against the disease. But there is no doubt that the use of the vaccine has reduced the incidence of the disease to an enormous extent, to such an extent in fact (as is shown by the records of the Medical Department of the U. S. Army) that the disease is no longer to be feared if the proper precautions are taken. But the protection that inoculation affords is a relative thing and is entirely dependent upon the dose of the infection in individual cases.

We have heard much in the past concerning the so-called "negative phase" in the use of the anti-typhoid vaccine. We were led to believe that vaccination is to be avoided in the presence of typhoid fever, and especially if an individual had been actually exposed to the disease. The relation of inoculation to the severity of the disease, considered both from the point of view of the number of inoculations, and the time of inoculation in relation to the onset of the disease, as shown by the data collected in this series of cases, definitely upsets the "negative phase" theory. In fact the results show that those cases did best who were inoculated after the onset of the disease. Anti-typhoid inoculation seemed, also, to have a very definite influence on the duration of the fever of the primary infection — the fewer the inoculations, the longer the fever, and vice-versa.

The actual value of anti-typhoid inoculation is difficult to determine. The wonderful record of the health of the troops in the U. S. Army as regards the incidence of typhoid fever, shows what results can be obtained by the general use of the vaccine. Nevertheless, there is no doubt that the advances made in sanitation and in sanitary organization, are important contributory factors in diminishing the prevalence of typhoid fever.

The use of the vaccine confers a certain degree of immunity in the individual inoculated. But immunity against typhoid fever is a relative thing and is transitory. If the agglutination test is an index of the degree and duration of this artificially acquired immunity, our researches show very clearly that immunity, in some cases, is fleeting and disappears in three months. It is probable that immunity in the majority of cases is more enduring, but in the average individual, we believe that it does not endure for three years. We must look upon anti-typhoid vaccination as a protective barrier against the infection, a barrier that has its limitations, and a barrier that has been repeatedly broken down. By a judicious use of the vaccine, in respect to dosage and frequency of inoculation, we believe that this protective barrier can be strengthened.

BLOOD CULTURES.

Blood cultures were done in 161, or in 88% of the cases.

In 55 of these 161 cases, or in 34%, the blood cultures were found to be positive.

The day of the disease on which the blood cultures were found positive averaged the 27th day.

Prophylactic inoculation seems to have no influence on the blood culture findings.

The day of normal temperature of those cases who had positive blood cultures averaged the 44th day, while the day of normal temperature of those cases who had negative blood cultures, averaged the 37th day.

Those cases having positive blood cultures were decidedly more ill than were those with negative blood cultures.

The percentage of relapses was greater in those cases having a positive blood culture than in those cases having a negative blood culture.

There seems to be no relation between blood cultures and complement fixation.

There is no relation between blood cultures and the presence of typhoid bacilli in the urine, stool and duodenal contents. Typhoid bacilli were found in the urine, stool and duodenal contents just as frequently in negative culture cases as they were found in positive culture cases.

Complications were more frequent in those cases showing a positive blood culture than in those cases in whom the blood cultures were negative.

The statistical data collected in respect to blood cultures does not convey much information of importance. Typhoid fever is a constitutional disease, the primary lesion being located in the small intestine where the typhoid bacilli are first found, from where they are distributed into the general circulation. It is questionable whether typhoid fever is invariably a bacteremic disease. It is conceivable that the constitutional manifestations can be attributed to a toxaemia resulting from the absorption of deleterious bacterial toxins from the intestine. When this toxaemia and the accompanying constitutional manifestations are the result of the actual presence of the organisms in the circulating blood, it can readily be seen that the shock to the human system would be more severe. The data collected from this series of cases shows that the cases with positive blood cultures were sick a longer time and were more severely ill than were those cases with negative blood cultures. The fact that complications were more frequent in positive blood culture cases further substantiates the opinion that cases with bacteremia are more severely ill.

Metastatic complications, such as Periostitis, Parotitis and Cholecystitis, in which the typhoid bacilli are actually found at the seat of the complication, are surely the result of bacteremia. In the case of Cholecystitis this fact is questionable, for the possibility of direct extension of the infection from the intestine upward to the gall-bladder is very evident. In such cases blood cultures are doubtlessly positive during some stage of the disease. The fact that positive blood cultures were obtained in only 41% of the cases presenting metastatic complications, is not conclusive.

WIDAL REACTION.

Widal reactions were done only on those cases who had not received anti-typhoid inoculation, and on those in whom the blood cultures were found negative.

Of the 78 cases on whom widal reactions were done, 77 were found positive.

The widal reactions were found positive, on the average, between the 43rd and 44th days of the disease. It must be remembered that the agglutination tests were done comparatively late in the disease.

For diagnostic purposes a widal reaction is of no value in a case which has received one or more prophylactic inoculations.

A positive widal in the absence of previous vaccination is of absolute diagnostic value.

When repeated blood cultures are necessary before one is found positive, and diagnostic widals are also done, the positive widal is usually found first.

When repeated blood cultures are made and all are found negative the widal is frequently found positive during the period of cultural examinations.

There is no doubt of the value of the agglutination test in the diagnosis of typhoid fever, provided, of course, that the individual has not previously received anti-typhoid inoculation. Inoculation in itself will usually give a positive widal.

In an endeavor to diagnose typhoid fever both the blood culture and widal examinations are to be repeated at frequent intervals.

The fact that positive widal reactions were obtained earlier than positive blood cultures is exceedingly interesting, and especially in those cases on whom three, four, and five cultures were done, and all found negative, seems to shows that a positive blood culture is not necessarily always to be found during some stage of the disease. It is not difficult to explain a positive widal in the persistent absence of a positive blood culture.

In over 13% of our cases the widal reactions were negative three and a half months after the onset of the disease.

There is no relation between widals done during convalescence and complement fixation tests done during convalescence.

The widal reaction, when positive, is an evidence of antibody reaction on the part of the individual infected. It immediately shows a degree of im-

munization against the typhoid bacilli. A positive widal reaction, therefore, whether the result of protective anti-typhoid inoculation, or of the disease itself, is an evidence of the establishment on the part of the individual of a degree of immunity.

In the studies carried on at Biltmore it was found that in almost 14% of cases, the widal reaction had become negative as soon as three and a half months after the onset of the disease. In one case a positive widal had already become negative in 40 days. I am inclined to look upon these facts as revelations of exceeding great importance in so far as they tend to show that immunity acquired as the result of typhoid fever itself, may be a comparatively transient matter. It brings up the whole question as to the frequency with which protective anti-typhoid inoculations are to be employed.

The immunity conferred as the result of anti-typhoid inoculation is surely not as efficacious, nor as enduring, as that obtained as the result of having the disease itself. We therefore believe that protection is enhanced by the more frequent use of anti-typhoid inoculation. It has been the custom in civilian practice to resort to prophylactic inoculation about every three years; in the U. S. army the period is every two years. One cannot arbitrarily state how often the inoculation is to be given, but in the light of these findings, we believe that vaccination should be resorted to more often than every two years, especially if typhoid fever is prevalent. In the case of an army, especially an army in the field, we must take the prevalence of typhoid fever for granted.

CLINICAL STUDIES AND OBSERVATIONS.

A review of the clinical symptoms which manifested themselves in this series of cases reveals nothing of particular interest. The initial bronchitis which is so frequently observed early in the disease was not a striking symptom in our series. Epistaxis was met with in comparatively few cases. Intestinal bleeding was frequently noticed: the fact of transfer from Hot Springs to Biltmore probably influenced this frequency. The virulence of the infection was severe.

The usual complications were met with and occurred about as frequently as in other large series of cases reported. They included the following: Phlebitis, parotitis, meningitis, appendicitis, broncho and lobar pneumonia, neuritis, typhoid spine, hemorrhage, periostitis, nephritis, epididymo-orchitis, adenitis, ulcerative laryngitis, bronchitis, psychosis, deafness, mucous colitis, pleuritis, furunculosis, ischiorectal abscess, perforation, cholecystitis, relapse and recrudescence.

Phlebitis was a late complication.

Broncho and lobar pneumonia were also late complications.

Neuritis is a complication of convalescence.

Typhoid spine is a very late complication.

Hemorrhage occurred more frequently at about the end of the third week.

Periostitis is a late complication.

Perforation occurred most frequently after the fourth week.

Cholecystitis is usually a late complication.

Relapse occurs most frequently after the sixth week.

Recrudescence occurs most frequently after the sixth week.

The average duration of the fever period was 39 days.

The average duration of the disease was 59 days.

BLOOD COUNTS.

The blood pictures at the onset of the disease varied between limits as follows:

White blood cells, 2,100-15,900...average, 6766
Polynuclears, 19-93%.....average, 55%
Lymphocytes, 7-81%.....average, 45%

A leukopaenia is usually to be found at the onset of typhoid fever.

A leukocytosis at the onset is frequently an indication of a threatening or already present complication, especially hemorrhage and perforation. There are, of course, other complications that are responsible for an actual or relative leukocytosis, but such complications are usually more apparent.

In those cases in which complications arose the average polynuclear count rose from 53.4% to 67.8%, while at the same time the average leukocyte count rose from 5919 to 12,227.

The blood pictures at or near discharge of the patients from the hospital varied between limits as follows:

White blood cells, 4,900-16,950...average, 9117
Polynuclears .....average, 51%
Lymphocytes .....average, 49%

At the time of admission to the hospital, during the acute stage of the disease, the average leukocytosis amounted to 6766. At or near discharge from the hospital, after convalescence had

been completed, the average leukocytosis amounted to 9117, an average increase of 2341 cells.

The eosinophilia at or near discharge from the hospital ranged as high as 15% and averaged 2.3%. In 15 cases the eosinophilia ranged between 5 and 15% and averaged 8.2%.

In general, it can be said that a leukocytosis in typhoid fever as in other infectious diseases, registers a protective process on the part of the individual.

RELAPSE.

Eighteen cases, or approximately 10% of the entire series, suffered a relapse.

It is not always a simple matter to decide the question of a relapse in an individual case of typhoid fever. The occurrence of complications is usually to be differentiated from actual relapse. We believe the best guide is the clinical course developed and the rather typical fever-curve that is to be expected in the event of a relapse. A recurrent fever course, with a positive blood culture, in a case in whom the blood culture had previously been negative, is conclusive proof of the occurrence of a relapse.

Positive blood cultures were obtained in 43% of the cases suffering a relapse. In about 28% of these relapse cases, the blood cultures, positive during the relapse, had previously been negative.

In only four of the cases did complications arise during the relapse.

Our results show that relapse cases were more severely ill than were the cases without relapse.

The majority of relapse cases had complications during the course of their illness.

We believe that cases presenting intercurrent complications, and especially those complications which are directly secondary to the typhoid bacillus, are more prone to relapses. It is not unreasonable to presume that a case with an acute complicating cholecystitis is more likely to suffer a relapse than is a case not having a cholecystitis. Such an occurrence practically amounts to a re-infection. We are inclined to believe that systemic re-infection (not from without the body) is the probable explanation for the occurrence of a relapse.

When a relapse occurs, cultural examinations of the urine, stool and duodenal contents are to be resumed.

Complement fixation tests continue positive longer in those cases having a relapse than in those not having a relapse.

PERFORATION.

In six cases, or in 3.4% of the cases, perforation of the intestine occurred. This percentage is slightly higher than is usually reported, and may have been influenced by the transportation of the cases from Hot Springs.

Perforation occurred, on the average, between the thirtieth and thirty-first days of the disease.

In no case of perforation had intestinal hemorrhage been noted previous to the perforation.

The mortality of the cases of intestinal perforation was 67%.

It is, probably, merely a coincidence that the two cases of perforation who recovered were the only ones of those cases perforating who had received prophylactic anti-typhoid inoculation.

CHOLECYSTITIS.

In our entire series 8 cases, or about 4½%, developed an acute complicating cholecystitis.

Complicating cholecystitis developed, on the average, on about the sixty-ninth day of the disease.

Forty-three per cent of the cases of cholecystitis showed typhoid bacilli in the stool.

Roentgenographic examination of the gall-bladders were not conclusive.

The necessity for surgical treatment of complicating cholecystitis in typhoid fever is not indicated in the great majority of cases.

Cultures from the gall-bladders and from the crushed stones which they contained, showed typhoid bacilli in each instance.

It is questionable whether palliative treatment of post-typhoid cholecystitis is the proper treatment. Our results show that cholecystitis is the primary, if not the only cause, for persistent infectiousness.

In the light of our later findings, with which we were able to demonstrate without much doubt that in persistent carriers infectiousness is directly traceable to infected and diseased gall-bladders, (and in our series only to infected gall-bladders), operative treatment of typhoid cholecystitis seems strongly indicated. A typhoid or post-typhoid cholecystitis is very apt to recur, and it seems that calculi invariably form in such an infected gall-bladder. Surgical treatment of cholecystitis secondary to typhoid, seems therefore, definitely indicated.

Cholecystitis was not a direct cause of death in any case.

We believe that cases of complicating cholecystitis in the great majority of instances will show positive duodenal cultures if the examinations are deliberately made with that point in view.

Biliary calculi were found in all cases of cholecystitis coming to operation. In three additional cases, cholecystectomy was performed in an attempt to clear up persistent infectiousness, and in each of these cases gall-stones were found.

Thirty per cent of the cases of cholecystitis developed to be typhoid carriers and all the cases of carriers had positive duodenal cultures. Several cases, not exhibiting a frank complicating cholecystitis, but who, nevertheless, turned out to be gall-bladder carriers, are not included in the 30% just mentioned.

BACILLURIA.

Typhoid bacilli were found in the urine in 49% of the cases in whom examinations of the urine were made.

To obtain the maximum number of positive urine cultures, examinations are to be begun about the end of the third week of the disease.

In 80% of cases in whom typhoid bacilli are found in the urine, they continue to remain negative, on the average, after the sixth week of the disease.

Examinations of the urine for typhoid bacilli in those cases that were never found positive, were found negative, on the average, about the forty-fourth day of the disease.

The prescribed regulations of the Medical Manual of the U. S. Army, in respect to cultural examinations of the urine, are not always sufficient to exclude temporary or permanent carriers. If the examinations are begun early in the disease, it is very doubtful whether three, consecutive, weekly, negative examinations are ever sufficient to exclude infectiousness.

Typhoid bacilli are excreted intermittently in the urine. Not all specimens during any twenty-four-hour period contain bacilli. Twenty-four-hour specimens are to be used for the cultural examinations.

During the acute stage of the disease the urine is to be looked upon as an exceedingly dangerous factor in the spread of the disease, and all necessary precautions are to be taken to rid it of its infectiousness. During convalescence the urine does not play an important role in disseminating the disease.

Acute nephritis is not a factor in prolonging bacilluria.

Cystitis was directly responsible for a continued bacilluria: the case in question was the only instance of a temporary or convalescent urinary carrier.

In relapse we have an absolute indication for the resumption of the cultural examinations of the urine.

There seems to be no definite relationship between bacilluria and complement fixation.

We believe it to be a coincidence that bacilluria was more prevalent among those cases who had received prophylactic anti-typhoid inoculation than in those cases who had not been vaccinated.

In this entire series there were four cases in whom a bacilluria continued for over three months after the onset of the disease.

Freedom from urinary infectiousness was obtained, on the average, 30 days after the day of normal temperature.

Persistent urinary carriers are very uncommon.

It is likely that a bacilluria is present in all cases of typhoid fever during some stage of the disease.

TYPHOID BACILLI IN THE STOOL.

Typhoid bacilli in the stool were found in 26.4% of the cases in whom cultural examinations of the stool were made.

To obtain the maximum number of positive cultures of the stool, examinations are best begun about the third week of the disease.

In 83.5% of the cases in whom bacilli were found in the stool, they continue to remain negative, on the average, after the seventh month of the disease.

Examinations of the stool in those cases that were never found positive, were first found negative, on the average, on the forty-first day of the disease.

About 74% of the cases in our series never showed typhoid bacilli in the stool.

While no special effort was made to obtain the maximum number of positive stool cultures, there is no doubt that typhoid bacilli are to be found in the feces during some stage of the disease. Isolating the organisms from the stool is purely a laboratory problem, and as was subsequently demonstrated in later researches, it is entirely a question of overcoming dilution. If sufficient amount of the stool is cultured in any individual case and a sufficient number of petri plates are

poured, the bacilli are very easily found.

In an uncomplicated case of typhoid fever, one that runs the usual course, there is no doubt that the intestinal canal is soon rid of the offending organisms. In these studies the majority of the cases were free from infectiousness from the stool in six or seven weeks after the onset of the disease. The use of the proper technique in the cultural examinations of the stool, begun during the height of the disease, will, we are sure, show a much greater percentage of positive cultures than 26.4%.

Three consecutive, weekly, negative examinations of the stool, as prescribed in the regulations of the U. S. Army Medical Manual, are not always sufficient to exclude a temporary or persistent carrier; and, as in the case of the urine, if these examinations are begun early in the disease it is doubtful whether three such examinations are ever sufficient to exclude infectiousness from the stool.

During convalescence cultural examinations of the stool are of far greater importance than are cultural examinations of the urine.

In the event of a relapse we have an absolute indication for the resumption of cultural examinations of the stool.

Following a complicating cholecystitis, very special attention should be paid to cultural examinations of the stool.

Following a complicating cholecystitis, cultural examinations of the stool should be continued for at least three months after the onset of the disease.

Cholecystitis tends to prolong the infectiousness from the intestinal tract.

A positive duodenal culture implies infectious stool. Proper cultural technique will demonstrate the organisms in the stool.

Any relationship between anti-typhoid inoculation and typhoid bacilli in the stool is merely coincidental.

Pure intestinal carriers are uncommon. Before the days of duodenal cultures intestinal carriers were thought to be the most prevalent type of carrier. From the sanitary point of view these cases can be classed as intestinal carriers.

Freedom from infectiousness was obtained, on the average, about twenty-six days after the day of normal temperature.

In 80% of the cases no relationship exists between bacilluria and typhoid bacilli in the stool.

The duration of the disease is not influenced by the cultural findings of the stool.

In this series, complications (other than cholecystitis) were more frequently found in those cases in whom typhoid bacilli were not found in the stool.

We believe that typhoid bacilli are to be found in the stool in all cases of typhoid fever during some stage of the disease.

CULTURES OF THE DUODENAL CONTENTS.

Cultural examinations of the duodenal contents are absolutely indicated in all cases of typhoid fever.

In this series cultures of the duodenal contents were made comparatively late in the disease.

Sixteen and one-half per cent of the cases examined showed positive duodenal cultures.

Duodenal cultures were found positive, on the average, on the seventy-first day of the disease.

Duodenal cultures were found negative, on the average, on the sixty-seventh day of the disease.

If the maximum number of positive cultures is to be obtained examinations should be begun soon after the termination of the febrile period of the disease.

We believe that typhoid bacilli are very frequently (if not invariably) found in the gall-bladder during some stage of the disease.

One negative duodenal culture is not sufficient to exclude infectiousness from the gall-bladder.

Duodenal culture findings are inconstant because of the intermittency of the emptying of the gall-bladder. Examination of the duodenal contents should imply an examination of the contents periodically aspirated and cultured during the course of twelve or twenty-four hours. Three such consecutive, negative examinations made at weekly intervals, are the criterion of a cure of persistent infectiousness.

Repeated duodenal cultures are to be made in all cases of cholecystitis, complicating or following typhoid fever.

The relation between duodenal cultures and cholecystitis is an intimate and important one.

Eighty per cent of the cases showing biliary calculi had positive duodenal cultures.

Persistent infectiousness is not necessarily immediately eliminated by the removal of the gall-bladder.

Duodenal cultures are of primary importance in the detection of typhoid carriers.

It is more than probable that most typhoid carriers are gall-bladder carriers.

Typhoid bacilli are to be found in the stool in all cases showing a positive duodenal culture.

Examinations of the duodenal contents are more important in the detection of carriers than are examinations of the urine or stool.

In the detection of continued infectiousness in typhoid fever, examinations of the duodenal contents are of paramount importance. The duodenal tube makes this examination possible and the procedure is simple. In these studies the duodenal tube has been employed hundreds of times in over a hundred individual cases and no untoward effects were noticeable.

DIAGNOSIS.

Of the 183 cases admitted to the army hospital at Biltmore 177, or 96.7% eventually proved to be typhoid fever.

Blood cultures were found positive in 34% of the cases.

Widal reactions were found positive in 98.7% of the cases.

Typhoid bacilli were found in the urine in 49% of the cases.

Typhoid bacilli were found in the stool in 26.4% of the cases.

Typhoid bacilli were found in the duodenal contents in 16.5% of the cases.

These figures do not and cannot show the maximum percentage of cases in whom typhoid bacilli are to be found in cultural examinations of the blood, urine, stool and duodenal contents. To obtain the maximum number of positive results the examinations are to be done earlier in the disease than they were done in this series.

Eighty-eight per cent of the cases ran a typical clinical course of typhoid fever.

The complement fixation test was found positive in 60% of the cases; this test, it should be remembered, was done during convalescence.

Additional positive cultural evidences of typhoid fever were obtained from a parotid abscess, post-operative abscess of the abdominal wall, gall-bladder at operation, and from biliary calculi.

In 2.8% of the cases a positive widal was the only evidence of typhoid fever.

In one case a positive urine culture was the only evidence of typhoid fever.

MORTALITY.

Of the entire series, 14 cases, or about 8%, terminated fatally.

The day of the disease of death averaged about the thirty-fourth day.

The immediate causes of death included: Pneumonia, toxaemia, pulmonary edema, hemorrhage, meningitis and peritonitis (perforation).

Thirty-six per cent of the cases terminating fatally had serious complications preceding that complication which proved to be the immediate cause of death.

COMPLEMENT FIXATION TEST.

Complement fixation tests were begun after convalescence had been established.

Complement fixation tests were done in 160 cases, or in about 87½% of the entire series.

Complement fixation tests were done, on the average, about the 109th day of the disease, and, on the average, about 70 days after the day of normal temperature.

The complement fixation test was found to be positive in various degrees of intensity in 95, or in about 59.4% of the cases. If we include as positive those cases having a plus-minus reaction, the percentage of positive tests would be over 66%.

It is suggested that complement fixation tests be done early in the disease for they may prove of diagnostic importance.

The longer the course of the disease the more likely is the fixation test to be positive at any given time.

Complicated typhoid fever cases are more likely to have a more enduring fixation test than are uncomplicated cases.

We believe that all cases of typhoid fever have a positive complement fixation test during some stage of the disease.

A positive complement fixation is of comparative short duration. With certain reservations, we believe that a positive test disappears rather quickly and endures for about 7-9 weeks after freedom from infectiousness has been established.

A positive complement fixation test during late convalescence should, perhaps, encourage or indicate further cultural examinations of the excreta.

TYPHOID CARRIERS.

Those cases in whom infectiousness from either the urine, stool or duodenal contents continued up to four to six months after the onset of the dis-

ease, are to be considered temporary or convalescent carriers. Those cases in whom infectiousness from either the urine, stool or duodenal contents continued for more than six months after the onset of the disease, are to be considered persistent carriers.

Our series of cases included 8 cases, or about 4½%, who were either temporary or persistent carriers.

Persistent urinary or intestinal carriers were not observed in our series.

The most frequent type of carrier is the gall-bladder carrier. Cholecystitis is responsible for most cases of persistent carriers.

A pure intestinal carrier must show conclusive negative cultures of the duodenal contents.

It is a surprising fact, one which is deemed of great importance, that in our entire series, not a single case of an intestinal carrier was observed. In each case in which typhoid bacilli were persistently found in the stool, the organisms were also isolated in cultures of the duodenal contents —in other words from the gall-bladder.

The indication for duodenal cultures in excluding infectiousness in cases of typhoid fever, is a very definite and absolute one, and cannot be too strongly emphasized.

Typhoid bacilli were not found in the urine in any case of complicating nephritis, after the fifty-second day of the disease.

The only case of post-typhoid cystitis in our series proved to be a temporary urinary carrier.

Sixty-two and a half per cent of temporary and persistent carriers suffered a complicating cholecystitis during or after the acute stage of the disease.

There exists a relationship between certain metastatic complications and typhoid carriers. Certain complications are very definitely the cause of persistent infectiousness.

Our studies show that the complement fixation test does, to some extent, indicate the presence of typhoid bacilli in the body, and as the fixation test decreases in intensity, becoming negative, so does the infectiousness clear up and disappear.

Prophylactic anti-typhoid inoculation has no influence on continued infectiousness.

The duration of the disease of those cases who eventually proved to be temporary or persistent carriers was considerably longer than in the cases in whom infectiousness cleared up promptly.

The temporary and persistent carrier cases were more severely ill than was the average case of typhoid fever.

The only rational and successful treatment of typhoid carrier is surgical—cholecystectomy with excision of the cystic duct.

Typhoid fever is a preventable disease. The incidence of the disease has been astoundingly decreased by the use of prophylactic inoculation and more can be accomplished along these lines. But endemic typhoid fever will continue to exist just so long as we fail to detect persistent infectiousness. Our researches at Biltmore show conclusively that the gall-bladder is the seat of continued infectiousness and an intelligent cultural examination of the duodenal contents can definitely detect this infectiousness. No case of typhoid fever is to be judged free from infectiousness until it can be conclusively shown that the gall-bladder and its contents are free from typhoid bacilli. In the event of persistent infectiousness the indication is definite and absolute—cholecystectomy.

AN ATTEMPT TO REVIEW AND SUMMARIZE THE SUBJECT OF REFLEXES AND THEIR DIAGNOSTIC IMPORTANCE.*

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Definition:

A reflex action is the involuntary production of activity in some peripheral tissue through the efferent nerve fibers connected with it in consequence of a stimulation of the afferent nerve fibers. The conversion of the sensory or afferent impulse into a motor or efferent impulse is affected in the nerve centers, and may be totally unconscious as well as involuntary, i. e., the emptying of the gall-bladder during digestion or it may be accomplished by consciousness of the act, as for example, in the winking reflex when the eye is touched.

Some of the early physiologists thought that the reflex might occur in the anastamoses of the nerve trunks, but a convincing proof that the central nervous system is the place of reflection or turning point was given by Whytt in 1751. He showed in a decapitated frog the reflex movements are abolished if the spinal cord is destroyed. The reflex act may affect not only the muscles, volun-

*Read before the Milwaukee Medical Society, 1920.

tary, involuntary and cardiac—but also the glands. We have to deal with reflex secretions as well as reflex movements. However in this paper I will confine myself to the discussion of reflex movements.

The Reflex Arc:

A reflex as defined implies that both sensory and motor paths are concerned in the act so that the typical reflex arc requires a sensory impulse, a center and a motor response.

The simplest reflex arc will consist of two neurones: the sensory neurone whose cell body lies in the sensory ganglia of the posterior roots or the sensory nucleus of the cranial nerves, and a motor neurone, whose nerve cell lies in the anterior horn of grey matter of the cord, or in the motor nucleus of a cranial nerve. The arc may, however, be more complex. The sensory fibers entering through the posterior roots, may pass upward through the entire length of the cord to end in the medulla, and on the way give off a number of collaterals, or they may make connections with a number of different motor fibers, or a sensory fiber carrying an impulse which eventually reaches the cortex of the cerebrum and gives rise to a conscious sensation may by means of its collaterals connect with motor nuclei in the cord or medulla, and thus at the same time give origin to involuntary and even unconscious reflexes. Painful stimulation of the skin, for example, may give a conscious sensation of pain, and at the same time reflexly stimulate the vaso-motor center and cause a constriction of the small arteries.

Example of Reflex Arc:

Knee jerk. The impulse is carried by the sensory branches of the crural nerves to the quadriceps center in the cells of the anterior horn in the second, third and fourth lumbar segments and from here the motor response is transmitted by the anterior roots and the motor fibers of the crural nerve, so that a lesion in any portion of this arc, or in the quadriceps muscle itself will result in a loss of reflex independent of the condition above in the spinal cord and brain. The reflex may be abolished by such a lesion, even though the arc is not destroyed completely. This is proven by the return of the reflex in a cerebral disease which increases the excitability of the anterior horn cells, even though such reflex has been absent for some time. Such a return of reflex is seen, i. e., in Hemiplegia, occurring in Tabetics. The reflex are of the skin reflexes is not limited to the spinal cord, but reaches up to the brain and up to the cortex of the cerebrum so that in Hemiplegia, for instance, the skin reflexes on the side of the paralysis are at least temporarily abolished.

Classification:

Reflex movements may be divided into three groups from a physiological standpoint. First: Simple reflexes, i. e., those in which a single muscle is affected, for example the winking reflex, in which only the obicularis palpebrarum is concerned. Second: Coordinated reflexes, in which a number of muscles react with their contractions so graduated as to time and extent, as to produce an orderly and useful movement. Third: Convulsive movements, such as are seen in spasms, in which a number of muscles, possibly all of the muscles, are contracted convulsively without coordination and with the production of disorderly and useless movements. An example of the convulsive reflex is seen in the well known convulsive reaction that follows tickling. The convulsive reflex may be produced by two different means, first by very intense sensory stimulation, when the reflex response overflows as it were, into all the motor paths, and second, by heightening the irritability of the central nervous system. The response to tickling illustrates the first method and the strychnia convulsions illustrates the second method.

Theory of Co-ordinated Reflexes:

In the mammals, as the cat, for instance, the spinal cord may be severed in the thoracic region, i. e., below the origin of the phrenic nerves, and the animal with care can be kept alive for months or years. On such an animal reflex movements of the hind legs or tail may be obtained readily from slight sensory stimulation of the skin. The knee jerk and similar so-called deep reflexes are also retained. But it is evident that these movements are not complete nor so distinctly adapted to a useful end as in the decapitated frog for instance. The muscles of the body supplied by the isolated part of the cord retain, however, a normal irritability and exhibit no wasting. In man, on the contrary, it is stated after complete section of the cord, the deep reflexes such as the knee jerk, as well as the skin reflexes are very quickly lost. The muscles undergo wasting and soon lose their irritability. The monkeys exhibit in this respect a condition which is somewhat in-

termediate between that of the dog or cat and man. It seems evident from these facts that in the lower animals a much greater degree of independent activity is exhibited by the cord, than in the more highly developed animals. According to the degree of development the control of the muscles is assumed more and more by the higher portions of the nervous system and the spinal cord becomes less important as a series of reflex centers, its functions being more dependent upon its connections with the higher centers.

Reflex Time:

Most observers state that the time within the center varies with the strength of the stimulus, being less the stronger the stimulus. It varies also with the condition of the nerve centers, being lengthened by fatigue and other conditions that depress the irritability of the nerve cells.

Inhibition of Reflexes:

There are many facts which indicate that the brain may inhibit the activities of the spinal centers. In the reflex from tickling, i. e., we know that by a voluntary act we can repress the muscular movements up to a certain point, so also the limited control of the action of the centers of respiration and micturition is a phenomenon of the same character. An example of such an inhibition is the well known device of inhibiting an act of sneezing by a strong sensory stimulation such as the pressure of the finger upon the upper lip. The inhibition disappears in such conditions as Strychnia poisoning where the irritability of the centers is greatly increased. Stimulation of the cord from two different sources may result not only in an inhibition of the reflex, normally occurring from one of the stimuli, but under some circumstances may produce a reinforcement of the reflex due to one of the stimuli. For example, the extent of the knee jerk may be greatly augmented, if at the time the blow is struck upon the tendon, a strong voluntary movement is made by the individual, such as squeezing the hands tightly together. Some conditions influencing the knee jerk for instance indicate clearly that the irritability of the spinal cord varies with almost every marked change in mental activity, i. e., during sleep, the knee jerk disappears and in mental conditions of a restful character, its extent is relatively small. In conditions of mental excitement or irritation, on the contrary, the jerk becomes markedly increased. The knee jerk and the other tendon reflexes are increased and diminished by whatever increases and diminishes the activity of the central nervous system as a whole.

Types of Reflexes:

1 Pupillary Reflex.
2 Deep or Tendon Reflexes.
3 Superficial or Skin Reflexes.
4 Sphincteric Reflex.
5 Sexual Reflex.

Pupillary Reactions:

The ciliary muscles react to two forms of stimuli, namely light, and the movement of the eyeballs. The ordinary light stimulation is transmitted by means of the optic nerves to the ocular-motor nucleus and from there the impulse to the ciliary muscle is carried by the third nerve. This is the light reflex arc and if there is any disturbance anywhere in the arc, there will result impairment or loss of pupillary reflex to light. The fibers which are concerned with the reaction of the pupil to movement as in convergence and divergence have probably a similar arc, with the addition that they are in connection with the nuclei of the nerves supplying the muscles necessary to perform a certain ocular movement. The Argyl Robinson pupil, which is found in Tabes and Paresis, does not react to light, but the reaction to accommodation is usually not impaired.

The Cilio-Spinal Reflex:

The center for this reflex is at the level of the first dorsal segment. Irritation of this center causes dilation of the pupil, and the loss of this center causes the contraction of the pupil. This is subject to the influence of a higher center in the medulla.

Deep or Tendon Reflexes:

In the upper limb there is the biceps and triceps reflex, and the wrist jerk. In the lower limb the knee jerk and the Achilles jerk. The spinal center of the biceps reflex is in the fifth cervical segment. The spinal center of the triceps reflex is in the sixth and seventh cervical segment. The spinal center of the knee jerk reflex is in the second, third and fourth lumbar segments. The spinal center of the Achilles jerk reflex is in the first sacral and fifth lumbar segment.

Ankle and Patellar Clonus:

A clonus is obtained only when there is an exaggerated tonicity, and always indicates a lesion of the motor or pyramidal tracts. It is possible to

get a biceps and triceps clonus in addition to the two mentioned. Rarely ankle clonus and sometimes patellar clonus can be obtained in hysteria, but the movements are not regular and the rythm is influenced by the will.

Skin Reflexes:

The spinal center for the abdominal reflex is in the eleventh dorsal segment. The spinal center for the umbilical reflex is in the ninth, tenth and eleventh thoraeic segment. The spinal center for the cremasterie reflex is in the first lumbar segment. The spinal center for the plantar reflex is in the second sacral segment.

The Upper and Lower Neurones:

The upper part of the motor system, namely the cortical cells and the fibers from them to the nuclei of the motor-cranial nerves in the crus, pons, and medulla, or to the cells in the anterior horns of the spinal cord and not including them is called the upper motor neuron or system, and by the lower motor neuron or system is meant the nuclei of the motor cranial nerves or of the cells of the anterior horn of the spinal cord, and the fibers coming from them, this including the motor, peripheral, or cranial nerves as far as their ending in the periphery. A normal relation between the two neurones, the upper and lower is necessary in the performance of any movement, and if there is a lesion in either, there necessarily results a disturbance of the relation or tone. In a lesion of the upper neuron we have over-action of the lower and vice versa. This overaction in the case of the lower motor neuron results in exaggeration of the tendon reflexes, in spasticity, and the Babinski phenomenon; and overaction on the part of the upper due to a lesion in the lower neuron gives flaccidity and abolition of reflexes. These together with the sensory or peripheral neuron are the portions of the central nervous system especially concerned in reflex action.

The symptoms of a destructive lesion of the upper motor neuron are spasticity with exaggerated reflexes and a positive Babinski sign. Those of lower motor neuron disease are the symptoms found in peripheral neuritis, i. e., atrophy, a flaccid gait, and absent reflexes. In peripheral or sensory neuron disease we get ataxia with absent reflexes and loss of sensation, and also a positive Rhomberg sign.

The diseases peculiar to the upper neuron (motor) are: Hemiplegia, birth-palsies, pseudo-bulbar paralysis, and primary lateral sclerosis.

The diseases peculiar to the lower neuron (motor) are anterior polio myelitis, bulbar palsy, Landry's paralysis, and the neuritis of lead and alcohol.

The disease peculiar to the sensory or peripheral neuron is Tabes.

The knee jerk is often absent or feeble in infants, likely to be very lively in high strung or oversensitive persons and in the Jewish race without disease. Absent knee jerks are found in peripheral neuritis, due to alcohol, diphtheria, lead, etc., also in tabes and in anterior polio myelitis (on the paralyzed side), also in deep coma from any cause, and in complete transverse lesions of the spinal cord, narcosis, muscular atrophy of high degree. Coma if not deep may show increased knee jerks on the paralyzed side in the case of apoplexy. Partial destruction of the cord often increases the tendon reflexes, but total division abolishes them. Increased knee jerks are seen in cerebral paralysis (infantile), idiocy, apoplexy and paresis. They are also found in spastic paraplegia and the amyotrophic forms of lateral sclerosis, in many cord lesions localized above the lumbar region, in the earliest stages of peripheral neuritis, in multiple sclerosis, and in some forms of chronic arthritis. Almost any chronic joint disease except tuberculosis may be associated with increased reflexes. The significance of the absence or increase of the Achilles reflex is practically the same as that described for the knee jerk. But since it represents a lower position in the cord, it may be affected earlier than the knee jerk in a cord disease which begins at the bottom of the cord and travels up. For instance, in Tabes it may be absent when the knee jerk still persists.

Ankle clonus occurs in spastic conditions of the legs or in any disease which materially increases the other leg reflexes. When only a few contractions occur on stimulation it is termed a spurious clonus. This is frequently found in neurasthenic and hysterical states, and is less significant than the true clonus. The Kernig sign obtained by flexing the thigh on the trunk at a right angle and then extending the lower leg is of value in the diagnosis of meningitis, though not pathognomonic.

The deep reflexes of the arm, namely the wrist, biceps and triceps reflexes, are only obtained when increased, and this increase occurs in practically the

same diseases which increase the leg reflexes, and in some chronic joint troubles. Of the superficial reflexes the Babinski is the most important. It is obtained on the paralyzed side in Hemiplegia and in the other diseases involving the upper motor neuron. The presence of cremasteric, abdominal and epigastric reflexes indicates that the portion of the spinal cord in which they are represented, namely, the upper lumbar and lower dorsal regions, is functionally sound, their absence however is not significant for in many healthy persons they cannot be elicited.

The winking reflex signifies the approximately normal conductivity of the fifth and seventh cranial nerves.

Sphincteric Reflexes:

The sphincters of the bladder and rectum are kept closed normally by reflex contraction and excited by the presence of urine and feces. In the absence of awareness of feces or urine as the case may be owing to the destruction of the conducting nerves or spinal nerve centers, involuntary urination and defecation occur, as for instance in transverse, diffuse, or compression myelitis above the fourth and fifth sacral segments where the centers for the bladder and rectum are located, or in other words above the level of the first lumbar vertebra. We also find the absence of this normal reflex contraction in Tabes, in Paresis, and less frequently in other chronic spinal cord diseases; also in deep coma there may be relaxation of the sphincters owing to abolition of sensation, as for instance in epilepsy and cerebral hemorrhage. The sexual reflex or sexual power is diminished or lost in chronic cord diseases involving the first and second sacral segments, or the nerves leading to them, such as, for instance, Tabes, Myelitis (some cases), and Paresis.

Unilateral spinal cord lesions or Brown-Sequard paralysis caused by tumors or injuries resulting from bullet or stab wounds will cause a unilateral lesion of one or two segments of the spinal cord. Should such a lesion occur, for instance, in the eighth cervical and first thoracic segments of the right side of the cord, due to the destruction of the nerve cells in the anterior horns there would result inability to flex or extend the right wrist, or move the fingers, as well as atrophy of these parts, and because of involvement of the right motor or pyramidal column, we would get spasticity, increased reflexes, and the Babinski phenomenon on the right side.

In case of hemorrhage into the cord as a result of a contusion of the substance of the cord or independently as the result of injuries and nearly always confined to the central gray matter the signs of upper motor neuron involvement will be present.

Paralysis of the ocular motor nerve causes ptosis of the eyelid and an enlarged pupil which does not react to any form of stimulation. Unilateral paralysis is nearly always due to basal syphilis.

Peripheral Neuritis:

Since in the diseases of the peripheral nerves the motor as well as the sensory limb of the reflex arc is affected, it is evident that decrease and loss of reflexes will occur. Usually the reflexes cease very early in the disease. In fact the loss of reflexes may often be the first objective indication of a destructive nerve disease, and it commonly outlasts all the other disturbances and may become permanent.

In a number of infectious fevers it frequently happens that during the febrile state the tendon reflexes of the limbs disappear, at least temporarily. This is true of lobar pneumonia, typhoid, diphtheria, etc. The same thing occurs in some toxic conditions, for instance, alcoholism and diabetes mellitus, though in such cases the loss frequently is permanent.

Hysteria:

The most characteristic knee jerk found in hysteria but by no means pathognomonic, occurring also in many conditions of irritability, is a sudden large extension of the leg with a start of the whole body. The knee jerks are never absent in hysteria, and likewise true clonus and Babinski reaction are never seen.

The triceps reflex may be of diagnostic importance in Tabes, especially when absent. All the tendon reflexes other than the knee jerks and the Achilles are inconstant and often demonstrable only in the pathological increase in reflex, even the dorsal foot reflex, We can say with certainty when a reflex is increased only in the case of the patellar and Achilles reflex. *Increase in the reflex affects a more extensive muscular contraction with considerable motor affect, and also the appearance of tendon reflexes not demonstrable at other times.* Increase in the patellar reflex is present when the reflex can be evoked, not only at the tendon above and below the patella and from the patella itself, but also by striking the perios-

teum of the tibia in a more or less extended area. In some cases a crossed reflex can be obtained, that is a contraction of the quadriceps of the other leg at the same time. The highest degree of increase is patellar clonus, when the muscle is affected by more or less rapid contractions lasting for some seconds. This clonus is obtained by relaxing the muscle as far as possible, seizing the patella firmly with two fingers and moving it suddenly toward the tibia. *A decrease of tendon reflexes is difficult to judge.* It is only correct to say that we have a decrease when it is evoked but feebly even with the assistance of re-enforcement, or when there is an obvious difference between the similar reflex of each half of the body and we can regard the stronger reflex as normal and not increased.

Plantar reflex is absent in every severe hyperesthesia of the sole of the foot, in severe cornification, oedema, cold, sleep, narcosis, neuritis, cerebral and spinal paralysis. Its absence is not of much significance.

The Effect of the Brain on Reflexes:

This is shown by the possibility of voluntarily checking certain reflexes, such as, for instance, coughing, breathing, etc. It is further demonstrated by the influence exerted on reflexes by mental disturbances, for instance, breathing is temporarily stopped during fear. In lesions of the brain, therefore, through loss of the normal inhibition many of the reflexes, notably the tendon reflexes, are exaggerated. The brain in addition to influencing the spinal reflexes is in itself the center for certain reflexes, namely the pupillary reflexes, those of light and accommodation, and also the so-called psycho reflex of the pupil. This is manifested by an undoubted dilatation of the pupils with all sorts of painful or vigorous stimulations, especially those of the skin; and also such things as unexpected noises and every psychic disturbance such as anxiety, terror, and energetic mental concentration. In sleep the maximum contraction of the pupils occurs. The loss of the psychic reflex is found frequently in certain mental diseases, particularly in juvenile idiocy.

Eyelid Reflexes:

These are the touch reflex and the light reflex manifested respectively when the cornea or conjunctiva is touched and by sudden exposure to strong light. The touch reflex is absent in diseases of the pons on both sides and also absent in hysteria.

The brain is also the center for the palatal or choking reflex and the reflex of swallowing with their sensory divisions in the pneumo-gastric and glosso-pharyngeal nerves and also for the reflex of vomiting, coughing and sneezing through the fifth, ninth, tenth, eleventh and twelfth nerves.

I have gathered the information for this paper largely from Howell's physiology, Cabot's diagnosis, a set of lecture notes by Weisenburg, and a recent text book on Nervous Diseases by Burr of Philadelphia.

SHOULD THE STATE CONTROL AND CARE FOR ALL ITS FEEBLE-MINDED AND EPILEPTICS.*

BY CHARLES GORST, M. D.,

MADISON.

Perhaps the most satisfactory definition of feeble-mindedness is the universally accepted one formulated by the Royal College of Physicians of London, and accepted by the Royal Commission appointed to study the problem of feeble-mindedness. Viz: A state of mental defect from birth or from an early age, due to incomplete cerebral development in consequence of which the person affected is unable to perform his duties as a member of society in the position of life to which he is born.

Dr. Henry H. Goddard's answer to the question, "Who is feeble-minded?" is this: Every person who is incapable of competing on equal terms in the struggle for existence, or is incapable of managing his own affairs with ordinary prudence is possibly a feeble-minded person, and it is probably safe to say that unless we can demonstrate that there is some other adequate reason for his incapacity, it is correct to regard him as a feeble-minded person and treat him accordingly.

What are the causes of feeble-mindedness? Dr. Walter E. Fernald states that the intensive study of the family histories of large numbers of the feeble-minded by Goddard, Davenport and Tredgold shows that in at least 80 per cent of the cases the mental defect had been preceded by other cases of defect in the immediate family line, proving absolutely that 80 per cent of feeble-mindedness is due to heredity. The other 20 per cent is due to accidents and disease. There is some consolation in the fact that this 20 per cent does

*Read before the Wisconsin State Conference on Social Work, 1919.

not transmit feeble-mindedness to the offspring.

How many feeble-minded people are there? In New York, 2 per cent of its school children have been found to be feeble-minded.

In an examination of 1,000 school children, Goddard found 2 per cent feeble-minded. The National Committee for Mental Hygiene during this year in an examination of 915 white school children in Georgia found 32 feeble-minded, which is over 3 per cent.

A recent survey of ten counties in the state of Indiana shows that 2.1 per cent of the general population are either epileptic, feeble-minded or insane, 1.65 per cent are feeble-minded, 0.31 per cent are insane and 0.15 per cent are epileptic.

The National Committee for Mental Hygiene found on the examination of 112 boys at the State Reformatory at Milledgeville, Georgia, that 68 per cent were suffering from nervous or mental abnormalities, 24.1 per cent were feeble-minded.

In the Georgia Training School for Girls it was found that 69 per cent of the inmates were mentally abnormal, and 27 per cent of them were feeble-minded.

In 1913, of 229 boys who entered the Indiana Boys' Reformatory only 63 were considered fit to be returned to society and able to make a living, 45 required continuous institutional care, and the other 121 will always need assistance to earn a livelihood.

Goddard states that actual tests in our reformatories for girls and boys show that at least 25 per cent of them are distinctly feeble-minded, and that nearly as many more are borderline cases, showing that nearly one-half of the inmates of state reformatories are mental defectives.

It is unnecessary to continue to give statistics of how many feeble-minded there are, because the same conditions have been found in every state, city or country where careful investigation has been made.

There is no question but that there are more than 2 per cent of the general population who are mentally defective in one way or another, neither is there any question but that more than 1.5 per cent of the school children of America are feeble-minded, and as one-fifth of the general population are school children, it would not be hard to estimate the number of feeble-minded children when the number of school children is known in a given district.

Considering that there are 100,000,000 people in the United States, there are 20,000,000 school children, and if 1.5 per cent of school children are feeble-minded, that would equal 300,000 feeble-minded of school age, besides all the feeble-minded adults.

Goddard states that there are 300,000 feeble-minded in the United States and that at least 500,000 persons have not sufficient intelligence to manage their own affairs with ordinary prudence, are unable to compete with their fellows on equal terms and thereby earn livelihoods.

A still larger number have not sufficient will power to force themselves to do the right thing when it is pointed out to them.

Dr. Bernard Glueck states that examinations of 608 prisoners at Sing Sing prison showed that 59 per cent were mental defectives.

The result of examinations of the inmates of a group of four state prisons, in different states, shows that 50 per cent of the prisoners are mental defectives.

The result of examinations of 8,086 men and women in seven different reformatories shows that 68 per cent of the inmates are mentally abnormal.

Twenty-seven and one-half per cent of the inmates of prisons throughout the country where examinations have been made are found to be feeble-minded.

Can the feeble-minded be detected? Director of the Bureau of Juvenile Research, Ohio Board of Administration, Columbus, Ohio, Dr. H. H. Goddard told me at the National Convention in Chicago last May that careful examinations are unquestionably detecting and classifying the mental defectives.

Dr. Walter E. Fernald, Superintendent of the Massachusetts State School for Feeble-Minded, has been making scientific classifications for a long time.

Dr. William Healy of Boston Juvenile Court and many other men who are making examinations of large numbers of children in the Juvenile Courts of the country are making successful classifications of the mental defectives.

Dr. Julius Grinker, a neurologist of Chicago, told me there was no difficulty about the classification of mental defectives and that successful results were being attained by neurologists generally.

How are the feeble-minded divided and classified? They are divided into three classes, the idiots whose mentality develops only to the aver-

age of a normal child of three years of age. The imbecile whose mentality develops only to the average of a normal child between three and seven years of age, and the moron whose mentality develops only to the average of a normal child between seven and twelve years of age.

The report of the commission of the state of Indiana after a survey of ten counties of the state with a population of 202,216 gives the following:

Those needing institutional care, morons 1,209, imbeciles 263, idiots 16, epileptics 80, total 1,568.

Those not needing institutional care, morons 1,558, imbeciles 128, idiots 21, epileptics 147; total 1,854.

The report also shows that there are 493 feeble-minded women between 16 and 45 years of age, (which means of child-bearing age), 213 of whom do not need institutional care and 280 of whom do need institutional care, showing that one in seven of the feeble-minded and epileptics is a woman of child-bearing age.

This report shows in a very concise way what a survey is likely to prove in any other district or state.

The division of the feeble-minded is approximately, idiots 1.40 per cent, imbeciles 19.28 per cent and morons 79.34 per cent.

Where are the feeble-minded to be found? Samuel C. Kohs, Psychologist, Chicago House of Correction in 1916 estimated that in the United States 121,960 were in feeble-minded and kindred institutions—59,960 in penal and kindred institutions and that the balance of 400,000 or 218,160 were at large. Of course these figures can be only approximately correct.

What are the feeble-minded doing in society? Those classed as idiots are only 1.40 per cent of the feeble-minded and they are doing no great harm except that they are a serious burden to any family and should be in the care of the state. Imbeciles are about 9 per cent of the feeble-minded, and because of their childish minds are buffeted about, taken advantage of, exposed to all kinds of danger, and abused in many ways, until some of them become violent and dangerous in the community, and all of them should have state care. Morons constitute 90 per cent of the feeble-minded, and while in school are continuously retarded in the work taking much time of the teachers, accomplishing little and always obstructing the advancement of normal children until finally they are so much retarded that they quit school and begin their unhappy and unsatisfactory lives of failure in the struggle for existence.

The boys attempt to find work and positions among men, but very soon they lose their places because they have neither mental capacity nor training to enable them to compete with the normal person, and after repeated failures, some of them become tramps, others commit petty crimes, are called incorrigible and sent to the state school for boys, or when a little older are sent to the State Reformatories, and still others commit the more serious crimes and are sentenced to the State Prisons for years or for life. Those who remain at large, take advantage of young women and reproduce their kind regardless of law or marriage and nearly all contract venereal disease and distribute it wherever they go. Moron men are continually committing unmentionable crimes all over the country, such as rape, robbery and murder, for instance the noted Fitzgerald case of Chicago and the murder and outrage of Mrs. Coppock of Iowa.

The history of moron girls while in school is the same as that of the boys, and they are sent to the state schools and reformatories for practically the same reasons as the boys, but those who remain at large, after repeated failure to compete with normal women, in the fields of occupation for women, begin to drift to the point of least resistance, many of them living lives of unhappiness and being imposed upon in every way, and many of them bring children into the world regardless of law or marriage, and always feeble-minded children.

Many others of this class become inhabitants of the "Red Light District" and live the most horrible lives possible and finally end their existence in the Potter's Field. Seventy-five per cent of the women who live this kind of life are feeble-minded, and seventy-five to eighty per cent of them have venereal disease, which they distribute to the roving men of the country, who carry it home to their wives and children.

What is organized society doing for the feeble-minded in the United States? It is taking state care of approximately 10 per cent of the known cases, and no doubt but the unknown cases is a very large number.

It is allowing the other 90 per cent to suffer the finger of scorn, the epithets of fool, dunce, etc., sending them to boys' and girls' schools for correction, to the reformatories and prisons for

shorter or longer periods to be repeated over and over again, and then allowing them to return to society to commit more crimes and propagate their kind.

It is allowing them from the cradle to the grave to go around and around the circle of ignorance, suffering want, poverty, immorality, disease, degradation, drunkenness, pauperism, from the smallest crime to the most awful murders, and finally to fill a pauper's or a criminal's grave, because they only possess the mind of a child, and cannot compete in the affairs of life with normal people.

Surely it is time that organized society should awaken to the facts concerning these people, control them, protect them, care for them, prevent their suffering and prevent them from bringing children into the world to repeat the same kind of life.

What can organized society do and what is it preparing to do?

A few years ago there was organized the National Committee for Mental Hygiene, with Dr. Thomas W. Salmon of New York as Medical Director and Dr. Fraulkwood E. Williams of New York as associate Medical Director and a large number of influential and experienced men as members of the Committee. This Committee is backed by money in such a way that it is assisting any of the states asking its aid, without cost to the state, except for office room. It has furnished aid to boards, commissions and committees in New York, New Jersey, Massachusetts, Ohio, Georgia, Alabama, Florida, Tennessee, Mississippi, Kentucky and Indiana, for the purpose of making surveys concerning mental defectives, at its own expense and reports and recommendations have been made to the governor and the legislature of each state.

During my eleven years as Superintendent at the Wisconsin State Hospital for Insane, I became satisfied that conditions concerning mental defectives could and should be improved in Wisconsin, and especially since the National Committee for Mental Hygiene began its work have I been more satisfied that conditions can be improved.

The statistics given in this paper are largely taken from the National Committee's Report to the various states.

After arriving in Madison last April, I decided to try to have the National Committee for Mental Hygiene assist in making a survey in Wisconsin for the purpose of informing the governor and members of the next legislature of the conditions concerning the feeble-minded, epileptics and degenerates in the state institutions, schools, etc.

I attended the National Convention of Superintendents of feeble-minded institutions in Chicago in May and talked with some of the leading authorities there. I then began the effort of getting some legislation, and after some manipulation succeeded in getting Joint Resolution No. 130A passed by both houses, which is as follows:

Whereas, The state is incurring considerable expense on account of its care and treatment of feeble-minded and epileptic; and

Whereas, There are thousands of people afflicted in this way to whom the state has not given any aid at all and over whom the state has not assumed control in any way; and

Whereas, The state is not in possession of sufficiently definite information as to the needs of the future; and

Whereas, The future welfare of the state will best be subserved by a thorough investigation along this line; and

Whereas, The national committee for mental hygiene has offered to make a survey of the state concerning the status of the feeble-minded and epileptic, which survey would be similar to those they have made and are making in other states and which would involve no expense to the state except the use of suitable rooms for office purposes; and

Whereas, A study and survey of the condition and needs would materially assist the future legislature in determining a practical policy to be pursued in this matter; now, therefore, be it

Resolved by the Assembly, the Senate concurring, That the state board of public affairs shall request the national committee for mental hygiene to make a thorough investigation of the number and needs of the feeble-minded and epileptic living within this state, and that they make a report of their investigation, together with their recommendations, to the governor and the next legislature; that said board be authorized to call upon such other existing agencies as it may deem proper to assist them and furnish them with necessary information.

Resolved, That the state superintendent of public property shall furnish said national committee for mental hygiene such suitable offices and furniture as may be necessary for the time required in their work.

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PRESIDENT OF THE SENATE.

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CHIEF CLERK OF THE SENATE.

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SPEAKER OF THE ASSEMBLY.

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CHIEF CLERK OF THE ASSEMBLY.

My first resolution was that this work should be done under the State Board of Control, but members of the legislature objected, and substituted my resolution by having the work done by the State Board of Public Affairs, and any state aid such board should select, leaving out the National Committee.

I amended the substitute in the senate, by having the State Board of Public Affairs call the National Committee to the work and to furnish suitable office room. My amendment was adopted by both houses, after some friction, and is the resolution as it now stands.

From the reports of the National Committee for Mental Hygiene in the eleven states where surveys have been made, I am practically certain of approximately what will be found by a survey in Wisconsin.

If Dr. Bernard Glueck found that 50 per cent of the inmates of Sing Sing prison were mental defectives, and if examinations of the inmates in four state prisons in four different states showed that 50 per cent of them were mental defectives, what reason is there to expect any better conditions in Wisconsin?

If examinations of 8,086 men and women in seven different reformatories shows that 68 per cent of them are mentally abnormal, why should we expect to find any better conditions at the Green Bay and Milwaukee Reformatories?

If 27.5 per cent of the inmates of prisons where examinations have been made are feeble-minded, why is it not so in Wisconsin?

There is no question but that at least one-half of the boys in the State School at Waukesha are mental defectives, and likely 25 to 30 per cent of them are feeble-minded.

There are feeble-minded and degenerates found in all the schools for the deaf and the blind. I know that Prof. Hooper after trying for a long time to educate some pupils in the School at Janesville, found that it was impossible on account of mental defectiveness.

The children who are sent to the Home for Dependent Children at Sparta are born of insane mothers in the State Hospital for Insane, of feeble-minded, drunken, careless, debased, degenerate and syphilitic parents and many of them have only one known parent, and that a feeble-minded woman. These children are gathered from the very worst conditions of life in the state, and still the report of the State Board of Control for 1916 shows that more than 700 of them have been adopted by sympathetic men and women of the state, without any mental examination whatever.

Dr. Prince, the Superintendent of the House told me a few weeks ago that less than 50 of the 257 in the House were fit to be adopted, and that many of them had syphilis. I know of nothing more wrong in the state than that the Home Finding Powers of the state, either official or unofficial, should request or allow innocent and sympathetic men and women to become responsible for diseased, feeble-minded, degenerate, delinquent, and criminally inclined children, instead of the state performing its duty by examining, taking and keeping full charge of all such children. The present method of managing these children is unreasonable and should not be followed another day.

In all of the above named state institutions in Wisconsin, the inmates have been sentenced or committed without a mental examination or classification, the court not knowing whether the offenders understood either the crime or the sentence imposed, or whether the offender was mentally responsible or not.

If the person was committed to one of the schools, the superintendent was not informed in any way of the mental condition of the offender. Justice was not done to the court, to the offender, the superintendent nor to society.

Judge Harry Olson of Chicago states that only 2 per cent of the population commit crimes, and that the 2 per cent is found almost entirely in the 2 per cent of the population who are mentally defective. He also states: "The courts are now censuring and punishing defectives because they conflict with the laws made for normals and not for defectives. These defectives deserve our care and consideration, as has been said in medicine, the diagnosis is half the cure; so we hope and feel in criminology that if we can diagnose the cases, we will be well on the way to a cure."

How many feeble-minded and epileptics shall we estimate there are in Wisconsin? The last census of this state showed about 2,600,000 population, and one-fifth of that number is 520,000, which would be the number of school children in the state, and 1.5 per cent of that number is 7,700 feeble-minded children of school age, and I think it safe to say there are fully as many adult feeble-minded. I feel sure my estimate is low sooner than high, this would equal 15,400 in the state. Indiana found 7 epileptics where she found 100

feeble-minded, so that estimating we have 15,400 feeble-minded, we should have 1,078 epileptics in Wisconsin, which would equal 16,478 feeble-minded and epileptics.

Indiana found that 47 per cent of her feeble-minded and epileptics needed institutional care; that same percentage in our state would mean 7,750 requiring institutional care, and that 8,728 could live in the community. It also found that 59 per cent of them were below 16 years of age, that 31 per cent or 5,115 were from 16 to 45 years of age, and that 1,650 were above 45 years of age, and that 11 per cent of the whole number, or 1,815, were women of child-bearing age between 16 and 45 years.

Dr. Walter E. Fernald states: "It has been truly said that feeble-mindedness is the mother of crime, pauperism and degeneracy. It is certain that the feeble-minded and the progeny of the feeble-minded constitute one of the great social and economic burdens of modern times.

There are at the present time from 75,000 to 100,000 feeble-minded women in the United States of child-bearing age, who bring children into the world regardless of law or marriage and distribute venereal disease to those with whom they come in contact. The married feeble-minded woman has two and four-tenths more children than the normal woman.

There is no question but society must control the dependent degenerate or he will control society.

The progress of society is now threatened by degeneracy and feeble-mindedness, and just as much so in Wisconsin as anywhere else.

What should Wisconsin do under the circumstances? She should bring the National Committee for Mental Hygiene into the state to assist in making a survey of the state institutions, and as extensive as possible in the state, the same as it has made in eleven other states, and make a report of the results of such survey to the governor and the next legislature, giving as nearly as possible the number of feeble-minded, epileptics and other degenerates in the state institutions, and in the general population in order to establish just and adequate care of these helpless citizens.

Every good man and woman in the state who is interested in this great problem should use all proper influence to have the next legislature pass such legislation as will bring about something like the following conditions:

The appointment of members of the State Board of Control and the main officers of the state institutions should be taken out of politics, making it impossible for a man who wishes to become governor to promise such positions for assistance in his campaign. Dignified, experienced and qualified men should be elected to this board just as we elect judges of the Supreme Court, keeping them in office as long as satisfactory and have them give all their time to their work.

This is the most important board in the state, being responsible for the comfort, care and treatment of over 14,000 persons at present, and should be responsible for several thousand more besides, spending now over $2,000,000 annually and will be obliged to spend an increasing amount for many years to come.

The state should institute a psychopathic department at each State Hospital for Insane, and try to make it popular for citizens with incipient mental trouble to go there for consultation and treatment, and when an adult has committed a serious crime, make it the duty of the trial judge to commit the prisoner to the psychopathic department of the State Hospital for Insane to remain until the medical staff of the hospital, assisted by any other medical experts, shall have decided upon the mental condition of such offender. If he is found to be sane, he shall be returned to the court for trial, but if found to be insane, feeble-minded, or to be suffering from a mental condition which makes him irresponsible for his acts, he shall be transferred by the State Board of Control to the institution to which he belongs.

This would relieve the courts of the responsibility of sentencing criminals to suffer for crimes they are not responsible for and would render justice to the court, the offender and to society.

The state should organize a State Board of Mental Research under the Board of Control similar to the one now operating in Ohio, under the State Board of Administration, whose function it will be to examine and classify all persons committed to the State Board of Control.

The state should relieve the courts of the responsibility of committing persons for minor offences to where they do not belong, by committing the feeble-minded, delinquents, epileptics, incorrigibles and dependent children to the Board of Control under whose direction they shall be examined and classified by the bureau of mental re-

search and then transferred to the institution to which they belong.

I am sure the courts are all very anxious to have relief from the present conditions. Judge E. R. Stevens of the Circuit Court of Dane County in a letter to me stated that justice cannot be rendered to the offender or to society without a mental examination and that the cost to the state would be many times less than it now is. He also stated to me verbally that it had been his ambition for years to send the criminal to the State Hospital for Insane for examination before bringing the prisoners to trial.

Judge August C. Hoppman of the Superior Court of Dane County writes me that after many years' experience in the practice of law and several years as City Attorney, Assistant United States District Attorney and three years as judge of the Superior Court of Dane County: "I am fully convinced that justice to the offender and society demands expert medical examinations of the offenders."

Judge Victor P. Arnold of the Juvenile Court of Chicago in a letter to me states: "It will be obvious that in many cases the court will be working in the dark unless it has the full information secured by medical examination. According to the degree of mental deficiency a person's responsibility for his acts is less and his need of special care and treatment becomes greater."

Judge Harry Olson of Chicago states that: "It is impossible for a court to render justice to an offender or to society without a proper medical examination."

Many judges with whom I have talked in recent years are of the opinion that justice to the offender, and safety to society demand an adequate mental examination by qualified medical experts.

The state should complete the New Home for Feeble-Minded at Union Grove at as early a date as possible, and then have it and the home at Chippewa Falls act as clearing houses where all feeble-minded, epileptics and degenerates shall be examined, classified and transferred according to necessity.

The state should have thorough medical inspection established in all its schools, and establish classes for the retarded and backward children, and when the child has reached a proper age and is retarded to a degree to be decided by qualified authority have such child examined by the State Bureau of Mental Research and finally taken charge of by the state when necessary.

Because the number of feeble-minded and epileptics in the state is *too large for the two state homes,* after the completion of the second one, and because it is absolutely unnecessary and too expensive for the care of such inmates, the state should buy large tracts of the cheapest good lands and organize the Farm Colony Plan for the care of these people. The cheap land would soon be made valuable by the labor of the inmates, and much of the work of constructing the buildings would be done by them. Many such people are able to do much in the way of manual work if properly directed.

The Farm Colony Plan is now being recommended by practically all men and women who are giving special attention to the question of the state taking charge of all its feeble-minded, epileptics, etc., and it is the plan recommended by the National Committee for Mental Hygiene to all the states where a survey has been made.

Every one who is giving special study to this problem feels that it is absolutely necessary for the state to place the strong arm of law and protection around these members of society who suffer so much injustice themselves and do so much wrong to others just because they have only child minds.

The state would by following this general plan prevent the courts from sending insane, feeble-minded and other degenerates who are not responsible, to suffer for years or a lifetime and it would stop these degenerates from returning to society, to repeat their crimes and reproduce their kind.

It would take all the feeble-minded and other suitable cases out of prisons, reformatories and schools of correction in the state and place them where they could be taught to work with their hands and help to support themselves, instead of spending the state's money and the time of its teachers trying to educate minds which cannot be educated. It would also prevent these persons from returning to society, committing more crimes and reproducing their kind, and in the future the reformatories and schools of the state would receive only persons who had been committed to the State Board of Control, and examined and classified by the State Bureau of Mental Research.

It would prevent the feeble-minded woman from being taken advantage of and being sent to the

County Poor House or elsewhere to give birth to a feeble-minded child who will be a dependent or left to grow up in poverty and crime.

It would prevent the feeble-minded woman from becoming an inhabitant of the "Red Light District", and living the most unhappy, miserable, shameful and debased life a woman could live, besides distributing the most terrible diseases and dying the saddest of deaths.

It would prevent the moron men from becoming fathers of large numbers of degenerate children each year, and also from committing nearly all the crime that is committed.

It would place the 53 per cent of feeble-minded and epileptic, or those who are easily controllable under parole by the State Board of Control, either in their own homes, under their own parents or if there is no home, under the guardianship of some responsible person and it would place the other 47 per cent in the permanent care of the state, where they would all be protected, live decently, commit no more crimes, and reproduce no more of their kind, which would really accomplish the four great results desired, viz: Prevent the suffering of the unfortunate who never have more than a child's mind. It would prevent them from committing crimes because they lack sufficient judgment to control themselves, prevent degeneracy by preventing the birth of degenerates, and prevent the spreading of venereal disease.

It may be argued by those who have not considered this problem that it would be so expensive that it could not be done, but suppose that the state should reach a condition where it would have to care for the 7,700 in state institutions, that would be only 377 to 100,000 population of the state. The numbers of the insane in the state and county institutions is greater and it is less costly to support the feeble-minded than the insane, because they are not ill and do not require treatment.

Take Dane County, which has approximately 100,000 population, give her 337 feeble-minded and epileptics, which would not cost as much per capita as her insane, and I am sure it would not be a serious burden to a county that is willing to spend $10,000,000 for good roads.

Every board, commission, committee, man or woman who has given study to this problem is satisfied that the cheapest thing society can do is to take full charge of its feeble-minded and epileptics, because if properly controlled for a generation, their numbers would be materially decreased.

In answer to my question at the head of this paper, "Shall the state take charge of all its feeble-minded and epileptics?" I certainly say, "Yes."

First—By keeping all feeble-minded and epileptics below the age of puberty under continuous observation of school medical inspectors who shall report all cases requiring further supervision to the State Board of Control which shall have all such cases examined by the State Board of Mental Research.

Second—By paroling all adult feeble-minded and epileptics under the State Board of Control who are easily managed, to their parents or some responsible guardian.

Third—By the State Board of Control taking full charge of all feeble-minded and epileptic adults who cannot be easily managed, and keeping them in the care of the state as long as they live.

Finally, I trust that the time has arrived when all good men and women will feel it their duty to protect the present and future child who is the greatest asset of the state.

I am sure if the citizenship of Wisconsin learns all the truth it will rise to the occasion and things will be different.

SUBLUXATIONS OF THE CRYSTALLINE LENSES AND THEIR TREATMENT.

BY GEORGE N. BRAZEAU, M. D.,

MILWAUKEE.

I do not believe that luxations of the crystalline lenses, either congenital or acquired, are very commonly seen. In an experience covering a number of years, I have seen a series of seven cases with and without complications at ages ranging from two years to sixty-five years. We know that heredity plays an important part in the pathology of this condition. The zonule of Zinn oftentimes offers very slight resistance to a displacement of the lens. A relaxation of its fibers sometimes permits the lens quite an excursion from its normal position. I will not go into the anatomy of the tissues involved, rather will I confine myself to the lesion itself and its possible treatment.

Subluxations of the crystalline lenses are divisible into complete and incomplete, acquired and congenital. My series represents two congenital and five acquired ones. The former are due to developmental defects though it is still uncertain which tissues are the most responsible for the

anomaly. It is well known that other anomalies always accompany this condition, as ectopia of one or of both pupils and marked errors of refraction and indefinite fundus changes, the subluxations usually being bilateral. The ectopia of the pupil was unilateral in my two cases. Whether the subluxation is due to faulty development or to an excessive stretching of the tunics of the eyeball or to a retraction of the vitreous or to all three is still undecided. In my cases the luxation was bilateral and the pupils were at the upper sclero-corneal margin. Only one eye in each case had such a pupil.

The lenses were visible through the normally placed pupils, only after dilatation of them when their transparent margins appeared as a dark, heavy, semi-circular line crossing the pupil. Previous to dilating the pupil, the only complaint the patient made was that he was near-sighted. The absence of the lens did not entirely neutralize the existing myopia. He attended school for several years without wearing glasses in spite of his aphakia. There was a very noticeable undulating movement of the irides whenever he moved his head. This led me to believe in a lack of support to the iris and on dilating the pupil normally placed, the lens was readily seen. Sufficient dilatation was not procurable in the eccentric one to obtain much information. The optical phenomena noticed after atropinization was very confusing indeed because of the great astigmatism due to the edge of the lens. There is often monocular diplopia or polyopia in these cases. The capsule of the lens is seldom ruptured and therefore the lens remains transparent. The tendency is for an upward displacement, in these cases it was lateral.

Traumatic or acquired dislocations present a different picture because of their causes and their amenability to treatment. These lenses usually become cataractous because it is rare for the capsule to escape injury. Luxations into the anterior chamber are rare. The posterior chamber is where most luxation occurs and then comes the vitreous. I have not yet seen a subconjunctival luxation. A lens in the anterior chamber can and does cause much reaction. Those in the posterior chamber are comparatively benign in their effects upon the eye. The vitreous shows a marked tolerance to a lens as proven by the operation for reclination. In some cases the lens is as though fixed, while in others the lens is freely moveable in the posterior chamber. I had a case lately in which the lens moved about as though it was intended it should. The eye had been injured years ago and was blind, with a complete detachment of the retina. The eye repeatedly became painful as the tension rose and annoyed him greatly, so enucleation was advised and accepted.

In another, the lens had dropped back into the vitreous and rested against the root of the iris and looked for the world like an incipient glioma. The child was two years old and had had a rupture of the sclera which I sutured in the hope of saving as much as I could. The eye had to be enucleated.

There is not much to be done for congenitally dislocated lenses. If it is possible to improve the vision with glasses, well and good, and if not, needling may be tried. Where the lens is concealed by the iris, glasses will be of great assistance. The treatment of opaque lenses is much the same as the treatment of cataracts in general. It is not always easy to remove a moveable and displaced lens, for I have seen a very able oculist suffer much humiliation at his failure to remove one. Better, it is, to wait some good reason before operating. Luxations into the vitreous during an attempted extraction are dangerous and the lens should be removed whenever possible.

NONINTERFERENCE IN TREATMENT OF PUERPERAL AND POSTABORTAL INFECTIONS.

Rest in bed, raising the head of the bed if the infection is of recent origin and appears rather virulent, are steps taken at once by E. L. King, New Orleans (Journal A. M. A., July 17, 1920). Hyperpyrexia is controlled by hydrotherapy. Fluids (chiefly water) are supplied plentifully—by mouth, if tolerated; by rectum, when indicated, and at times by hypodermoclysis or intravenous saline infusion. The patients are nourished freely on soft or semisolid food, the only contraindications being vomiting and peritonitis. The bowels are kept open by enemas, saline laxatives being used only occasionally. In cases of pelvic cellulitis or pelvic peritonitis, apply a light ice bag to the hypogastrium; when the acute local symptoms have subsided in these cases, copious douches of plain hot water are used twice daily. Drugs are secondary to the general supportive measures. The patient is given a general supportive treatment, and the pelvis is left severely alone after the preliminary examination. The best results are obtained in these cases by letting the uterus alone until the temperature is normal and the uterine culture becomes negative. The only exceptions are (1) patients in whom placental tissue appears through the open cervix, or (2) patients suffering from profuse bleeding due to the retained fragments.

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EDITORIALS

GET BEHIND THE RED CROSS.

ENLISTING the aid of an entire nation in a huge public health campaign is not as easy a matter as bringing a nation into line behind a war relief agency, simply because the circumstances surrounding the casualties and suffering of war are far more dramatic than those that accompany the ravages of preventable disease and poor sanitation. Nevertheless, the American Red Cross last year, at the beginning of its peace-time campaign succeeded in signing up ten million members. This year, with a peace record in its way as fine as its war record behind it, it hopes to get even a larger measure of popular support. The annual Roll Call is set for the two weeks from the 11th to the 25th of November. There are in this country ninety million people who did not join last year. It is these ninety million that the Red Cross wants.

It is not easy to interest a healthy man in health. The people who are preoccupied with health are usually the people who haven't got it. Physicians and nurses, however, are an exception to this, since the health of others makes the success of their professions. And therefore it is the physicians and nurses who, realizing the need for public health work and the measure in which the Red Cross can fill that need, can by spreading the Red Cross message, do more than any other class of people to make the membership drive a success. They can join themselves and they can persuade others to join. It is the duty and the privilege of every one connected with either the medical or the nursing profession to give the Red Cross his or her aid.

THE NURSING SITUATION.

WE have all realized the seriousness of the nursing situation. From every side one hears complaints of the scarcity of nurses and criticisms of their over-training, their pro-

hibitive fees for the average family and their unwillingness to assume the duties the "old-time nurse" accepted as an understood part of her work. We have all believed some less highly trained women must be developed to care for the sick. We believe reforms when possible should come from within a profession and we asked Mrs. Adelaide L. Northam, Principal of the Milwaukee County Training School for Nurses to send us an abstract of a plan she recently presented to Wisconsin nurses at the annual meeting of the State League of Nursing Education. It follows just as she sent it in. This is a live subject and the pages of The Journal are open to both the nursing and medical profession for discussion and proposals of plans to solve the question.

STATE LEAGUE OF NURSING EDUCATION.

BY ADELAIDE L. NORTHAM, R. N., PRINCIPAL, TRAINING SCHOOL FOR NURSES, MILWAUKEE COUNTY HOSPITAL.

At the annual meeting of the State League of Nursing Education held at Wausau, Oct. 6, certain interesting features in regard to the training of nurses were discussed and planned for.

Three great essential needs are apparent in the nursing situation as it exists today.

1. The demand for the bedside care of the sick in the homes of every class of society.

2. The demand for the public health nurse in the varied activities in that particular phase of the work.

3. The demand for the nurse in specialization, including executive position in hospitals; instructors for schools for nurses; special preparation for operating room supervisors, obstetrical, pediatrical nursing and various other specializations.

In order to meet these demands, a change in the training of the nurse seems necessary and imperative.

To sum up briefly, some of these recommendations were: That as the three-year course for the training of nurses does not sufficiently prepare her for the specialized work, and whereas the three years is too long a time for a general training, in order to meet the demand for bedside nursing that the three-year law be changed to not less than two years. That during this two-year period, the training of the nurses be placed strictly on an educational basis, and all unnecessary services not essential to the education of nursing be eliminated. That the nurse receive during this time a general training that will prepare her for general nursing in the care of the sick, thus leaving the choice, if so desired, of any special work to the nurse, after the completion of the two years of training.

That the preliminary educational requirements for the general training be one year of high school or its equivalent. That after the year 1924 the degree of R. N. be conferred on only such as have completed four years of high school or its equivalent and successively completed the prescribed course in the school for nurses.

That any nurse having finished the two-year course and having only one year of high school may become eligible to the degree of R. N. after she has obtained through the medium of night school, summer school, study or tutoring the required number of credits equivalent to the four years of high school. If a young woman does not so aspire to the degree of R. N. after she has completed the two years of training she will be known as a graduate nurse. It is hoped that by this means a higher standard may be placed to the degree of R. N. and that institutions employing nurses for executive and responsible positions will help maintain these standards by employing *Registered* nurses only.

A further constructive program for the training of attendants and the licensing of all engaged in the care of the sick for hire was discussed and planned as a part of the work for the coming year.

FORWARD.

THE world's war having revealed many physical defects in the young manhood of our country and it being fair to assume that a similar or greater number of our young womanhood are also suffering from physical weakness, it is an opportune time to place emphasis upon the importance of measures to correct such conditions.

First in importance in this connection is the present association of the United States Public Health Service with the State Board of Health in quickening the medical profession, as well as the laity, in the early reporting and quarantining of communicable and preventable diseases.

It is a well known fact that many of the phy-

sical defects of adult life are traceable to the diseases of childhood.

Wisconsin medical men should endeavor in this matter to raise their standard of efficiency to the 100% mark.

Reports from all states are being studied and tabulated; these reports reflecting credit or discredit upon each state as a whole. Pride in the standing of our profession as well as state pride should make us aim high in this important work, also remembering that a healthy populace makes for a prosperous state.—*M. R. W.*

THE STATE MEETING AT LA CROSSE.

BY those who attended the State Meeting at La Crosse it was voted a success. The scientific program was excellent; the entertainment provided was unusual and enjoyable; the orations in medicine and in surgery were certainly worth while and of a high order; the citizens of La Crosse proved themselves interested and good hosts—four hundred of them coming out on the river excursion with the doctors and their ladies; the visiting ladies had an enjoyable time; the weather was ideal, but the meeting was NOT a success.

The State Medical Society has a membership of over eighteen hundred; a few over two hundred registered—*one in nine.* This surely bespeaks a low standard of scientific conscience in the society. It means that the membership realizes neither its opportunity nor its responsibility; its possibilities nor its duty. The fault does not lie with the officers who are popular and hard working. The society is peculiarly free from cliques or rings—has always been. We do not believe the profession of the state is over-organized. Every eligible practitioner should think enough of the profession to not only have membership but to give personal service to the society in county, district and state meetings. Otherwise he becomes an incubus—accepts privileges but refuses duty—is a slacker.

Our great metropolitan city with some six hundred members had about fifty members at the State Meeting, though the trip was the easiest and least time consuming possible—by night each way. Does this mean that just one in twelve of the medical men of Milwaukee has any interest in the collective well-being of our profession?

New and unusual problems are presenting themselves. Group medicine, diagnostic clinics, health centers, community hospitals, public health extension, compulsory health insurance, state medicine and what not are in the air, in people's minds and in not a few state legislatures in some form.

Are we keeping informed as individuals and as a profession to meet new conditions as they arise? Are *you,* and *you,* and *you,* doing your share? Is the young medical man especially, doing his duty as a citizen as well as a mere practitioner; is he reasoning in community terms? THINK IT OVER—*E. E.*

WHAT EVERYONE SHOULD KNOW ABOUT CANCER.

THE most recent publication of the American Society for the Control of Cancer is a handbook entitled: "What Everyone Should Know About Cancer." This is intended for an audience quite different from that reached by the handbook previously published by the society, one which was planned chiefly for physicians. This is addressed to everyone, and while the physician will find much of interest scattered throughout its pages, it has been prepared mainly for those who have no technical knowledge and who, therefore, wish to learn what they can, expressed in the simplest language. It is a well recognized fact that the successful treatment of cancer depends upon its early recognition, a matter upon which the American Society for the Control of Cancer has insisted in all its publications. Such early diagnosis, however, can be made only if the person in whom the cancer has begun goes to a physician. The success of the treatment after that point depends upon the doctor himself, but up to the time of entering the doctor's office, it depends upon the patient. The extraordinary importance of cancer as a cause of death, (one person in ten after the age of forty in the United States dying of cancer), has only recently been recognized, and is not very widely known even among well informed people. Most persons delay going to a physician until the disease has extended to such a degree that the chance of successful removal is very slight, simply because they have never been told what a cancer looks like or what sensations

it causes. They think that a cancer must hurt,—when as a matter of fact, pain is one of the late symptoms of the disease,—and also that the disease is hereditary and contagious. This handbook tells exactly what is known on these subjects: that cancer is not contagious nor does heredity play any known part in the occurrence of cancer in the human race. Very excellent advice is given in it concerning the conditions which may lead to cancer, such as sores about the mouth, rough teeth, and ulcers of the stomach; and the symptoms are set forth. The modern methods of treatment are summarized so that anyone can judge of their relative value. All forms of cancer are carefully discussed, the sections on the different types having been written by specialists, and the whole revised by a committee composed of some of the leading students of the subject, including Dr. Francis Carter Wood, Director of Cancer Research; George Crocker, Special Research Fund, Columbia University; Dr. James Ewing, Professor of Pathology at Cornell University and Director of Cancer Research at the Memorial Hospital, New York; Dr. Harvey R. Gaylord, Director of the State Institute for the Study of Malignant Disease, Buffalo, N. Y.; Dr. E. E. Tyzzer, Director of the Cancer Commission of Harvard University; and Dr. Frederick L. Hoffman, Statistician and third Vice-President of the Prudential Life Insurance Company. These names are a guarantee that all the statements made have been carefully sifted according to the latest knowledge, so that the data in the booklet may be accepted without argument by those interested in the movement for the control of this disease.

Health departments, medical organizations or others desiring to secure this handbook for general distribution in quantity may order it through the American Society for the Control of Cancer, 25 West Forty-fifth Street, New York City, at the following rates:

5000 copies	$175.00
1000 copies	50.00
500 copies	25.00
100 copies	5.00

Orders for fifty copies or less for personal distribution will be furnished free of cost by the society.

THE JOURNAL CLINIC
Edited and Published by
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The University of Wisconsin.

CLINIC OF DR. L. M. WARFIELD, MILWAUKEE.

Aneurism of the thoracic aorta is an exceedingly common affection. In almost all cases the primary cause is a syphilitic aortitis which destroys the middle coat of the aorta and paves the way for a possible stretching by the systolic pressure of the cardiac systole. Not all cases of syphilitic aortitis develop aneurism. Further, not all cases of aneurism give a history of symptoms which could be interpreted as those due to aortitis.

Aneurisms usually grow slowly. They may be small and cause serious and distressing symptoms, or they may be large and cause no symptoms. This paradoxical state of affairs is due solely to the site of the aneurism. A small aneurism directly over the trachea, esophagus or at the situation where the recurrent laryngeal nerve loops around the aorta may produce violent symptoms and be difficult to demonstrate. A large sac beyond the great vessels may grow out towards the chest wall to the left and be easily found before symptoms are produced. Thus clinicians, following Osler, have divided aneurisms into two classes, those of signs and those of symptoms.

After thirty years neither sex is exempt. Below thirty years aneurism is not common to either sex.

A short series of case histories illustrates the variability of symptomatology.

Case I. Mrs. H., a stout, healthy, large-boned white woman was referred to me September 27th, 1920, on account of attacks which were thought might be angina pectoris. She was 46 years old. Her complaint was pain over chest in paroxysms which radiated down the left arm.

The family history is unimportant. She usually had good health. About twelve years ago she had attacks of gallstone colic. In June, 1919, gallstones were removed by operation. In September there was operation for intestinal obstruction. In June, 1920, she was operated for umbilical hernia.

She has three living, healthy children. She has had no miscarriages.

The most important point in her past history is that a year before the onset of the present illness she noticed a dull, aching pain over the left side of the chest which was worse in the evening. Further, she has had edema of the ankles in the evening for the past two years. In

the morning the swelling would be gone. She has also had dull, aching pains in the arms and legs and shooting pains in the extremities.

About September, 1919, her attacks began. There was sharp, shooting pain over the left side of the chest which radiated down the left arm. The hand and feet became cold; cold sweat would stand out on her forehead and she would gasp for breath. These attacks came on about twice a week and lasted about two hours, but attacks have lasted sixteen hours. There were fainting spells as well. She was quite incapacitated. The only relief came from opiates. In October, 1919, she was treated in a sanitarium for a month without benefit. She was bedfast from November, 1919, to April, 1920. She also had frequent attacks of sharp pain across the upper abdomen with constricting girdle sensation. Although she has been up and about since April she has had frequent attacks of pain and shortness of breath.

Physical examination revealed a fleshy, large-boned, healthy looking woman. The left pupil was slightly larger than the right. Both reacted actively to light and accommodation. The eye grounds were normal. The neck was thick. No abnormal pulsations were seen. The pulses were distinctly unequal, the left was the smaller. The blood pressure in the left was 118/78, in the right 128/80. There was dulness beneath the manubrium continuous with the cardiac dulness extending 2 cm. to right and 4 cm. to left of the sternal border. The heart was not enlarged, there were no murmurs, but there were occasionally ventricular extrasystoles with compensatory diastolic pauses. There was tubular breathing heard over the manubrium. The abdomen was pendulous, two right rectus scars were seen. The liver and spleen were not enlarged. The reflexes were normal. No edema was found.

The urine was normal. The blood Wassermann reaction was one plus.

Under the fluoroscope there was a pulsating globular mass in the region of the ascending portion of the arch of the aorta about the size of a small orange.

The diagnosis of aneurism had been made before the X-ray examination. This confirmed the diagnosis. The patient was kept in bed, was given a very scanty diet and fifteen minims (not drops) of a saturated solution of potassium iodide three times daily. During the six days she was in hospital under observation she had three brief attacks of pain. These were controlled with small doses of morphine given hypodermically.

She left the hospital feeling better than she had felt for months.

DISCUSSION.

This is one of the group of aneurisms of symptoms. Upon analyzing her history it is quite possible that the pains in the chest two years or more ago were the expression of a syphilitic arteritis. Often aortitis is symptomless. Again it may cause the most distressing paroxysms of pain and dyspnea. This patient had only the substernal pain. Her complaint evidently threw all her physicians off the track and she was getting nitroglycerine and atropine to control the anginal attacks.

It is not known just why the pain is so severe in the cases and why it should radiate down the left arm. There are explanations but they do not really settle the question.

Attacks of anginal pain should not befog the diagnosis. If one always has aneurism in mind, it is usually easy to make the diagnosis. The important points are: the irregular pupils, the abnormal areas of pulsation, the difference in the radial pulses, hoarseness, a husky, brassy (goose) cough. This last is so characteristic, when it is present, that as soon as it is heard a diagnosis can be suspected at once.

CASE II. A white man, 51 years old, unmarried, entered the Milwaukee County Hospital on June 5, 1920, complaining of cough, pressure under the breastbone and pain around the heart. The family history is unimportant.

He has always been well except for scarlet fever and diphtheria when a child. He denied venereal infection.

He began to cough early in May, 1920. There was no sputum. He was kept awake with the cough, could not lie down in bed. He had become weak and had lost fifteen or twenty pounds recently.

On examination he was a tall, spare man sitting up in bed, the face indicated that he was suffering pain. He had a dry, metallic, "brassy" cough, without sputum. He was dyspneic and slightly cyanotic. He could not take a deep breath. The pupils were normal. There were no abnormal pulsations visible. There was dulness beneath the manubrim extending to both lungs 4 cm. from sternal border and continuous with the heart dulness. Tubular breath sounds were heard over this area. Lungs were clear except for small area of dulness in the left interscapular space opposite the fourth dorsal vertebra. The apex beat of the heart was in the fifth intercostal space 12 cm. from M. S. L. No murmurs were heard. Second aortic was slightly accented.

With the fluoroscope there was seen a large conical pulsating mass above an enlarged flattened heart, which occupied the site of the arch and filled up the anterior mediastinum. The mass extended about 5 cm. to left and 3 cm. to right of sternum.

The urine was negative.

W. R. four plus.

He was kept in bed, given potassium iodide 1 c.c. three times daily and 1/10 grain bichloride mercury intravenously every third day. After three injections he was salivated and the injections were discontinued. He had morphine or codein at first.

Within a week he could sleep comfortably, he had lost his pain and dyspnoea and coughed occasionally. He gained 17 lbs. in weight in three weeks. After three months of hospital care he felt so well that he asked to be discharged.

DISCUSSION.

This case was not difficult to diagnose. As soon as the cough was heard attention was directed to the probability of aneurism and examination quickly confirmed the diagnosis.

The treatment of these cases is important. Absolute rest in bed with a limited diet is the first essential. Morphine must be given now and then. Potassium iodide is almost a specific for the pain and should be given in doses of ten to fifteen minims three times daily over a long period of time.

Should the active syphilis be treated with arsphenamine or with mercury? Most men now use mercury, either intravenously or by inunction. The latter method is good if the drug is rubbed in by an attendant. The exertion of the half hour rub by the patient himself is very tiring. I have been using mercury intravenously for some time in doses of 1/10 to 1/6 grain of the bichloride dissolved in 15 minims (1 c.c.) of sterile water, or one may use the ampoules of mercury and serum distributed by several drug firms. The greatest care must be exercised to prevent the minutest fraction of a drop of bichloride solution entering the subcutaneous tissues. Another drawback to the introduction of bichloride is the frequent thrombosis of the vein into which the drug is injected. Personally, I like the method and have had very little trouble since I have learned a few tricks which only are learned by practice.

The patient was peculiarly sensitive to mercury. From a bed-ridden man who could scarcely sleep at all, he became a comparatively normal man who felt so well that he considered himself fit to do light work.

He may live several years, he may die suddenly from a rupture of the aneurism into the trachea or bronchi. His span of life depends largely upon his own actions.

(To be continued.)

FROM THE CLINIC OF EGAN, SIMONES, TOWNSEND & GALLAGHER, LA CROSSE, WIS.

The following case reported from this clinic is of interest because of its rarity.

Miss X, Washington, D. C., age 27, dietitian, came to us with the following history:

I. Present complaint,

(1) Shortness of breath,

(2) Pain in the right chest,

(3) Dry cough.

II. History of the complaint,

The patient was in perfect health until the seventh of July, 1920. Upon this date she was paddling a canoe upon the Potomac river, a rather severe physical exercise which she was unaccustomed to.

About one-half hour after paddling the canoe, the patient was lying in a hammock when she began to get very short of breath, and was seized with a pain in her right ride. She told her companions that it felt as if a rib were sticking in her right lung, and as if her right lung felt larger than the left. She was unable to turn on her right side without severe pain. She also became very short of breath when lying on her left side. She was able to lie comfortably only upon her back, with the right side a little lower than the left.

The pain in the right side of the chest was very severe and knife like, and worse upon deep breathing. It was limited to the lower part of the right side of the chest.

This pain persisted acutely for about three days, accompanied by marked shortness of breath, worse upon exertion, and a hacking, painful, unproductive cough which was worse upon exertion. Three days after onset of complaint, the patient consulted an excellent internist, who, after a thorough physical examination, made a diagnosis of pneumothorax with almost complete collapse of the right lung. She was put to bed for three weeks.

Since this time she has been up, but exercising very little. She came to us on Sept. 15th, 1920, complaining of pain in the lower part of the right side of the chest, marked shortness of breath, and a dry hacking cough, all symptoms being worse upon exercise. She has observed no improvement in her condition in the past two months.

The patient has no other complaint referable to any other part of the body. She has a fair appetite, her bowels are regular, she has no fever or night sweats, she has lost about ten pounds since the onset of her illness.

III. Menstrual History:

Normal in every respect.

IV. Past Medical History:

She never had a doctor in her life until her present illness. She was always in splendid health, and has had no symptoms referable to the respiratory system.

V. Family History:

She has a splendid family history, and there is nothing in the family history with any bearing on the present case.

VI. Habits and occupation:

Her habits are regular. She has been very much of an athlete until the past few years, when her work as a skilled dietitian has prevented her from taking her accustomed amount of exercise.

PHYSICAL EXAMINATION.

Patient is a well developed intelligent young female who walks in. She is quite short of breath, and slightly cyanotic, but does not appear acutely ill.

1. Head and neck:
   (1) Scalp: Negative.
   (2) Eyes: Negative, pupils equal and react to light and accommodation.
   (3) Ears: Negative.
   (4) Nose: Negative.
   (5) Throat and mouth: Teeth in good condition, tonsils small and not infected.
   (6) Neck: Lymph nodes not enlarged. No enlargement of thyroid.
2. Thorax:
   (1) Inspection:

   The right side of the thorax is a trifle fuller than the left. Excursion of both sides equal. Litten's sign not elicited on either side. Apex beat is one inch to the left of the anterior axillary line in the fifth interspace.

   (2) Palpation:

   No Pottinger sign elicited. Tactile fremitus increased over the whole of the left lung. It is normal over the right lung down to the spine of the scapula behind and to the second interspace in front. Below this limit the tactile fremitus is entirely absent on the right side. The apex beat is one inch to the left of the anterior axillary line.

   (3) Percussion:

   Normal resonance over the left lung. Cardiac dulness misplaced to the left. There is hyper-resonance over the whole of the right lung, but more marked at the base behind.

   (4) Auscultation:

   Breath sounds are normal over the right lung behind down to the spine of the scapula, and in front to the second interspace. Below this the breath sounds are almost inaudible and amphoric. The whispered voice sounds come through on the right side with a peculiar hollow sound very similar to the sound that one gets when calling down a rain barrel or cistern. The bruit d'airain of Trousseau is well elicited over the right lung. There is no succussion splash nor metallic tinkle. The breath sounds over the entire left lung are exaggerated, and range from broncho to broncho vesicular in type. There are no rales to be heard over either lung. There are no cardiac murmurs, but there is a marked accentuation of the pulmonic second sound.
3. Abdomen:

   Negative, except that the lower border of the liver is two finger breadths below the costal margin.
4. Pelvic:

   Not made.
5. Extremities:

   Negative. Reflexes are normal.

The temperature followed over several days shows no variation from normal. The pulse rate is 90, strong and regular. The B. P. S. 105, D. 88, mercury instrument. Respiratory rate 20. Her present weight is 132. Former weight 145.

LABORATORY FINDINGS.

Sputum examination, negative.

Urine examination, negative.

Blood, Wassermann examination, negative.

Alveolar tention	40
Red blood count	4,270,000
Hb. Sahli	77%
White blood count	5,600
Differential blood count:	
Polymorphonuclear neutrophiles	45%
Large and small lymphocytes	53%
Polymorphonuclear eosinophiles	1%
Transitionals	1%

FLUOROSCOPIC AND X-RAY.

Examination with the fluoroscope reveals the right lung collapsed to the size of one's fist. The rest of the chest cavity on the right is filled with air. There is no fluid. Upon deep inspiration the collapsed right lung expands in all directions for about one inch. The heart is misplaced to the left.

STEREOSCOPIC PLATES.

These confirm the findings with the fluoroscope, the right lung being collapsed to the size of one's fist, the heart misplaced to the left, and the left lung much compressed with no evidence of tuberculosis.

DIAGNOSIS AND CONCLUSION.

The diagnosis is a right sided pneumothorax with complete collapse of the right lung, and is of interest for its rarity in not being associated with definite traumatism or disease.

The treatment to date has been conservative, being limited almost entirely to complete rest.

The patient was gone over again on Oct. 6, 1920, at which time a careful physical examination combined with X-ray and fluoroscopic examination revealed the collapsed lung almost entirely expanded, and all subjective symptoms referable to her condition entirely cleared up.

UNUSUAL CASE OF MERCURIC CHLORID POISONING.

In the case cited by Clayton McPeek, Columbus, Ohio (Journal A. M. A., Sept. 4, 1920), a tablet of mercuric chlorid of 7 3/10 grain strength was dropped through the open nozzle into the bulb of a syringe and water poured in. This preparation was used so hastily that the tablet did not have time to dissolve. As a result, the tablet and water were forced into the posterior vaginal vault, the tablet remaining there. After two hours of fitful sleep, the patient awoke, suffering violent pain in the lower abdomen and vagina, nausea, vomiting, irregular heart action and syncopal attacks. Caffein sodiobenzoate, copious douches of albumin and Seiler's solution were given an hour later. Within thirty-six hours a black area or line made its appearance on the upper and lower gum surfaces. The teeth became loose and sore. Salivation was very marked. The gums sloughed and the mucosa of the hard palate was partially detached. The nasal mucosa sloughed, and capillary oozing continued from the mouth and nose for a period of twelve days. From the third to the seventh

day the patient could not talk. The senses of smell and taste were lost for four weeks. The vaginal mucosa detached in large pieces. Optical examination revealed a large ulcer on the posterior part of the cervix, which persisted for six weeks. Urine examination on the sixth day revealed albumin, blood cells, blood and granular casts, bladder cells and débris. The alimentary tract began to act vigorously on the fifth day, when thirty-three stools in thirty hours were noted. Long shreds of intestinal mucosa and clots of blood were present. The bowel condition subsided in three days, after which action was induced as needed by the subcutaneous use of pituitary extract. In a general way the patient made a recovery, although after four months the urine still shows albumin in casts.

ACUTE CARDIAC UPSETS DURING OR FOLLOWING SURGICAL OPERATIONS.

A condition usually called acute dilatation of the heart has been observed by Samuel A. Levine, Boston (Journal A. M. A., Sept. 18, 1920), in nine cases during or following surgical operations. Each patient was found to have an abnormal auricular mechanism; three had paroxysmal auricular tachycardia, four had paroxysmal auricular fibrillation, and two had paroxysmal auricular flutter. In all but two cases the condition was transient. There is satisfactory roentgenographic evidence, by studying similar upsets in nonsurgical patients, that the heart does not generally dilate during these attacks. It is urged that well-defined terms which actually describe the abnormal mechanism be employed when possible, rather than the vague name "acute dilatation of the heart." Direct vagal pressure or ocular pressure proved successful in arresting all three of the cases of paroxysmal auricular tachycardia. Proper digitalis therapy controlled the course of the cases of paroxysmal auricular flutter and paraxysmal auricular fibrillation.

DEATH FROM APOTHESIN SPINAL ANESTHESIA.

A man, aged 43, in the case reported by W. S. Duboff, Edgewater, Colo. (Jour. A. M. A., Aug. 28, 1920), with extensive bilateral fibroid tuberculosis and subacute tuberculous laryngitis, because of severe dysphagia especially for fluids, entailing great suffering, was offered a gastrotomy operation, which he accepted. On account of the profound cachexia and the unfavorable pulmonary condition, it was thought advisable to use spinal anesthesia. Puncture was made in the second lumbar space with an ordinary Quincke needle. Seven cubic centimers of spinal fluid were withdrawn, the patient sitting up at the time, with the back arched. The spinal fluid was added to a previously prepared solution of apothesin (one one-fourth grain tablet dissolved in 3 c.c. of distilled water and boiled for three minutes), thoroughly mixed and slowly injected. The patient was then promptly placed on his back with the head slightly raised on a pillow. The pulse was at this time between 80 and 90, regular and of good force and size. At the end of one minute the patient was unable to raise either leg, but could feel pin pricks. At the end of the second minute there was anesthesia to the iliac crests. At the end of three minutes the surgeon was told he could proceed. But before the patient could be draped, he suddenly became ashy, complained of a tightness in the chest, an inability to draw his breath, and announced that he was dying. The pulse could not be felt at this time. The respirations became very labored and ceased a few seconds later. The pupils were equal and somewhat contracted till after death. There had been no preliminary hypodermic of morphin.

POST DIPHTHERITIC PARALYSIS OF RESPIRATORY MUSCLES.

The case reported by Wm. McKim Marriott, St. Louis (Journal A. M. A., Sept. 4, 1920), demonstrates the practicability of applying artificial respiration more or less continuously for a long period of time to a patient suffering from paralysis of the muscles of respiration. The artificial respiration was kept up at intervals for five days, and at the end of that time the respiratory muscles had so far regained their function that the artificial respiration was necessary only at relatively infrequent intervals. It was not necessary at all when the child was perfectly quiet; but after any exertion, such as coughing or after feeding with the nasal tube, it was necessary to apply the respiration apparatus for a short period. The function of the respiratory muscles steadily improved, and at the end of a week it was possible to dispense entirely with the artificial respiration.

TESTS IN HAY-FEVER PATIENTS.

Thirty-two hay-fever and asthma patients were tested by Mark J. Gottlieb, New York (Journal A. M. A., Sept. 18, 1920), for skin sensitiveness to determine whether their symptoms were due to anaphylaxis from epidermal, bacterial or food proteins. Forty-eight patients were tested with pollens to determine whether their symptoms were due to sensitiveness to these vegetable bodies. There were 2,105 skin tests performed on the thirty-two patients, and the average number of tests per patient was a little over sixty-five. In the epidermal group, twelve were found positive and 220 negative. In the bacterial group three were found positive and 119 negative. In the food group, forty-eight were found positive and 1,482 negative. The results of these tests are given in detail.

METHYL ALCOHOL POISONING.

A study of a series of cases in the medical wards of the Cincinnati General Hospital has led to a plan of treatment reported by Raphael Isaacs, Cincinnati (Journal A. M. A., Sept. 11, 1920) that promises to be of value in saving life and in preventing blindness, the most serious of the complications of convalescence. The plan of treatment is based on alkalization and elimination. Tables are given which show some of the symptoms and effects of alkalization as opposed to the method of stimulation only. The author reaches the conclusions that (1) wood alcohol appears to vary in its toxicity to different individuals; (2) the symptoms are those of depression of the medulla and the cranial autonomic

system and at times the sacral. There is usually a marked and early effect on vision; (3) there is a rapid disappearance of the symptoms (unless the anatomic injury is beyond repair) with intensive alkali therapy, and (4) many of the toxic symptoms probably accompany the acidosis, which may be associated with the acid production (formic) and with methemoglobinemia.

PREVENTIVE MEDICINE

Edited by
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SHOREWOOD'S EXPERIENCE IN THE CONTROL OF COMMUNICABLE DISEASES.*

BY MR. W. C. SIEKER,
SHOREWOOD.

The village of Shorewood is located on the shores of Lake Michigan, directly north of the city of Milwaukee. It is for all practical purposes a part of Milwaukee. Its population is wholly suburban, practically every adult male going to Milwaukee every morning to his work or place of business. Shorewood has no shopping places excepting a few neighborhood groceries, meat markets, and two drug stores. It has no movies, no churches excepting a Catholic church and a small English Lutheran church. It has its own public school and a parochial school, employing a total of seventeen teachers. Quite a number of its children attend the graded school maintained by the Milwaukee Normal which is close by. Others attend private schools located within the city. Almost the entire population of high school age is in attendance in the Milwaukee high schools, the village maintaining no high school of its own. On the other hand a few Milwaukee children and Whitefish Bay children attend the local parochial school. There are also a few tuition pupils in the public school.

A year ago one hundred and sixty new houses were under construction, and at present one hundred and four new homes are being built. During the past two years every third house changed hands. These conditions have brought about rather rapid changes in the population of the village.

I mention these facts to point out that the problems of the Health Board are not quite identical with those of a remote municipality, snug and secure in its isolation, but are greatly complicated by proximity, close contact, and constant intermingling with a metropolitan center.

Shorewood has been unfortunate in that, until recently, there has not been a single resident physician in general practice, and now has but one, I believe, the medical inspector of the schools. It has a goodly sprinkling of specialists of many varieties—alienists, oculists and aurists, obstetricians, surgeons, chiropractors, osteopaths, dentists, and what not. Accepting the assertions of the specialists at par value, there is a pronounced incompatibility between their work and that of the Health Officer, chiefly, I believe, commercial, making that talent unavailable for public health service. Accordingly, the "distinction" of being health officer has always fallen to the lot of some layman. The position carries with it no salary or fees, and, naturally, is not eagerly sought.

About three and one-half years ago the writer was duly elected a member of the Health Board, and in turn, Health Officer. The position was accepted under protest. Having been a liberal critic, however, especially at the time when it was found necessary, as a protection to my own children, to quarantine them for three months while a neighborhood epidemic of whooping cough wore itself out for lack of additional available victims, I could not, in good grace, arbitrarily decline. This self-inflicted quarantine, may I add parenthetically, served its purpose. Our children were the only ones in our immediate neighborhood, covering several blocks, excepting one who seemed to have a natural immunity, that escaped the epidemic. One little girl lost her life.

Statistics dating prior to the present administration are not available. The control of communicable diseases, if general observations are a safe guide, was almost if not quite as bad as it was during my first year. The most marked difference perhaps was the silence of one of the "kickers", being now at the other end of the wire. It was naturally assumed heretofore that a case of measles would be followed by another, and another, and still another, and so on. Usually a single case in a grade would be followed by others in the same grade. The schools of Shorewood, as elsewhere, were foci from which communicable diseases radiated in all directions. The first year

* Read before the Fifth Biennial Conference of the Health Officers of Wisconsin.

brought us a total of 219 cases of diseases that medical literature classes as preventable.

Why then were they not prevented? Many causes contributed. Physicians failed to report, or were not prompt in doing so. Others, not knowing when they crossed that imaginary line separating Shorewood from Milwaukee, sent their post card notices to that city. Where no physician was called, parents invariably failed to report. In time these matters were remedied, but a situation more puzzling confronted us. From one to six weeks would usually elapse from the incidence of the disease to the time when a physician would be willing to make a definite diagnosis of whooping cough. In the meantime the child afflicted would freely intermingle with others and attend school. From several days to several weeks would pass before sufficiently definite clinical symptoms would warrant a diagnosis of scarlet fever. One day the malady would be called a sore throat, the next day tonsilitis, and diphtheria the next, and until the final diagnosis of diphtheria there could be no official quarantine. "Just a cold" would become measles a few days later.

The Board of Health came to the conclusion finally that mere compliance with the law, reporting and placarding promptly, while conducive of much good, were wholly inadequate measures to control communicable diseases. It did not *prevent* our children from becoming afflicted with *preventable diseases.* It was essentially a failure in Shorewood, as I believe it to be elsewhere.

At the beginning of the second year, September, 1918, the Board of Health, at a special conference attended by teachers, school officials, village officials, clergy, and others, announced its intention of inaugurating a new policy. This policy embodied three departures from its previous practice, briefly stated as follows:

1. Isolating first, and diagnosing afterwards;
2. Placarding on suspicion; and
3. Substituting in large part educational propaganda for the exercising of police powers.

It was agreed upon that no child henceforth was to be permitted to remain in the schools if he had a cold, a cough, a sore throat, or was otherwise indisposed, no matter how mild the symptoms. Consideration for the comfort of the child itself should prompt such a course, and when one takes into account the potential mischief in its presence, failure to exclude strikes us as a reckless disregard for the rights of others. An excluded child was to be readmitted only after it had been definitely determined by competent medical authority that its illness was not communicable. The burden of proof was shifted. The public interests were to be paramount, and those of the individual secondary. It was pointed out to the citizens that this policy was made necessary by reason of the fact that the medical profession had not yet advanced far enough to enable the most skilled within its ranks to differentiate between whooping cough, measles, diphtheria, scarlet fever, and other so-called children's diseases from an ordinary cough, sore throat, or a common cold when the first symptoms appeared, and that at the outset the diseases in question are already exceedingly contagious. "Isolation first and diagnosis afterwards" was to be the invariable rule.

Speaking to Mr. Morey of Waukesha County, reputed to be the largest individual milk producer in the world, I questioned him as to what he would do if he discovered a cow in his stable some morning not acting entirely right. Prompt and decisive came the reply: "Isolate it. We cannot afford to take such chances." Of course he cannot. Cattle are too valuable. Shorewood is not ready to concede that its children are of less account than a premium bull or a herd of Holsteins.

Results seemingly have justified this program of radical exclusion. Paradoxical as it may seem, school attendance has become much more regular. During the past year not one child contracted whooping cough, diphtheria, scarlet fever or any other of the common children's diseases while attending the public school, and only one child managed to get into the parochial school carrying contagion with it. That one child created enough mischief to account for about one-fifth of the total safeguard on the assumption that he has a right to as many fingers when he leaves the factory as when he went in, so have the children a right to reportable diseases for the year, and was directly responsible for the loss of approximately 800 half-days attendance. The record of the schools for the preceding year was equally good.

Shorewood takes the position that just as a worker in industry should be surrounded by every safeguard on the assumption that he has a right to as many fingers when he leaves the factory as when he went in, so have the children a right to come back from the school at night as well and

free from infection as when they left their homes in the morning.

The second point in the new program consisted in placarding houses on suspicion. When clinical symptoms were inconclusive, but circumstances warranted a suspicion, homes were placarded "whooping cough suspected", "influenza suspected", "scarlet fever suspected", and so on, as the case may be, and the same quarantine regulations were maintained as though there was no question as to the diagnosis. Though quite a number of homes have been placarded on suspicion, the number of erroneous guesses has been negligible. The virtue of this expedient lies in the fact that erroneous guesses never result in injury to anyone, while a "correct" suspicion is often the means of preventing much needless suffering. Especially in dealing with whooping cough has placarding on suspicion been helpful.

It is only natural that one should exalt his own calling. Were I the writer of the medical profession, it is quite probable that I would not be in agreement with what I am about to say in connection with the third point in our revised program. Much as I approve of a medical man's occupying the position of health officer on a full time basis, none the less it is my opinion that the work of that office is chiefly administrative, and the methods and measures are primarily educational and secondarily of a medical nature. The Shorewood Board of Health resolved upon a program of education. The way to correct the universal indifference of parents and the occasional neglect of the physicians in the matter of reporting communicable diseases is not by making a horrible example of some offender, saying or writing ugly things to him, or threatening, or bringing him before the bar of justice. Violations of the law and of other regulations are usually not wilful. The offenders know no better. The need to be educated is in order, and the most highly educated in the scholastic sense need the schooling in matters pertaining to public health usually as much as those to whom we attribute a lesser degree of intelligence. Indeed, the latter are often much the more teachable. They look upon the preaching of the health officer as the expression of a superior wisdom, and accept his conclusions and mandates with the credulity of a child.

Through our educational propaganda we are trying to establish a sentiment, and have largely succeeded in doing so, of having it looked upon as a discredit, if not a disgrace, for contagion to travel to a second family. It is a most unusual thing to find two placards of the same kind in a neighborhood at the same time. Be it said to the credit of the mothers of Shorewood that only in the rarest instances during the past two and one-half years has there been any evidence of failure to conform to the standard in this regard that the Board of Health has taken such pains to establish. The responsiveness of the mothers has been marvelous. The Shorewood mother is determined that so far as it lies within her power, if she should be so unfortunate as to have an afflicted child in her home, the contagion shall not travel to a second family.

Through occasional conferences, attractively printed bulletins, the columns of the press, and above all, through the schools, the educational process has gone on. The schools, I feel, must be enlisted in this work. Our teachers must be trained to a full realization of the function of the schools. It is to train for citizenship, a citizenship equipped to meet the problems that arise in the commonwealth.

What are the outstanding qualities that need to be developed in the making of a good citizen, one who will add strength to the state and not be a burden to it? Character comes first, health is second, and adequate earning power, or what is virtually synonymous, productive power comes third. Unfortunate is the community whose teachers see their duty done when their pupils have mastered the mechanics of the three R's and of the other branches that constitute the curriculum. The teacher must train for character. She must also train for health. Medical inspection in schools is good, but it is a serious mistake to rely wholly upon that for health work. I cannot conceive of a good, clean, comprehensive job being done, certainly not in the large centers, and much less in the remoter sections, unless the teachers take an active and important part in this work.

Religious observance of the doctrine, "isolated first, and diagnosed afterwards," has borne good results. Two hundred and nineteen afflicted with communicable diseases was the record the first year. The following year the number dropped to twenty-three, and the year that closed August 31st brought a total of sixty-three.

During the past year two accidents contributed

one-third of the total; the other two-thirds were infected by making contacts outside of our limits. A woman of intelligence, living on Edgewood Avenue, the street separating Shorewood from Milwaukee, saw fit to disregard the standard that we thought had been firmly established. Her child, not attending any school, was not isolated until it "whooped," resulting in the development of ten cases in that congested section.

The second case is that of the second grade of the parochial school. On a Sunday morning a Milwaukee physician informed me by telephone that he had just come from two Shorewood homes where he found two girls of about the same age, attending the same grade, in the same school, afflicted with scarlet fever. He added that he thought I would be interested in getting this information immediately. (May I say right here that the Milwaukee physicians, generally speaking, have given us fine support.) Bright and early the next morning the school doctor and nurse were at that school examining each child of that grade as it entered. Due to the weather, there were quite a number of absentees. None that reported showed any evidence of scarlet fever or any other illness. During that morning two additional cases were reported from the same grade. The grade was promptly closed. Seven nurses, obtained through the assistance of Dr. Dearholt and Dr. Brumbaugh of the Wisconsin Anti-Tuberculosis Association, together with the local nurse, made a house to house canvass, visiting every home having a child in that grade. Two suspicious cases were reported. I learned from the mothers that no physician in either case had been consulted. Why should they? Their children were entirely well, they had often had a similar rash which was attributed to a minor digestive disorder.

The medical inspector of the school, upon visiting these homes, sent in a report of scarlet fever in each case. The parents of one of the children refused to accept the diagnosis and called in their own physician, who confirmed the diagnosis already made. The incipient epidemic was checked. There were twelve victims, six of them in one family.

These mild cases of scarlet fever make it difficult to maintain the usual quarantine regulations. Parents are apt to seek an early release. It has been our policy, however, to be absolutely unyielding. When the official handbook, issued by the State Board of Health, declares that scarlet fever is communicable for probably six weeks, what could justify a layman in taking the position that the State Board is probably mistaken?

I am happy to be able to report that most physicians cognizant of a duty to the public as well as to their patients, invariably support the health officials. When in doubt, the public is given the benefit of the doubt. We would rather quarantine a week too long than a week too little. Probably due entirely to luck, but possibly due, in part at least, to the rigid enforcement of the regulations, we have been fortunate in having had no so-called returned cases during the past two and one-half years.

The Shorewood Board of Health has made it a point to be absolutely unyielding in the enforcement of its regulations. To do otherwise would be to barter away the rights of the children who cannot speak for themselves. Though unyielding, we endeavor always, if possible, to avoid a fight. There is never a winner in a fight. It is a mistake to name the lesser loser a winner. A fight at times may be necessary, but it is worth so much to avoid it, so much for the protection of our children, that we go to great lengths to avoid one. We cannot afford to have factions in our community. We want all to be active propagandists for good health.

In conclusion permit me to say that I feel it almost presumptuous to have consented to appear on this program. I make no pretences of being expert in public health work. My being a health officer is wholly an accident. I trust that you will accept what has been said merely as the observations of a layman.

Here is an extreme case that we had. It was last spring. In the family of Mr. Ralston, the oldest boy was afflicted with diphtheria. The father did not want to be in quarantine. He sent word asking to have the boy transferred to the Isolation Hospital. We maintain none. The city of Milwaukee usually helps us out. I made arrangements to have that boy transferred, and then the children wanted to come back to school, the other two. I sent word back that I could not consent to their coming back to school until we had two negative cultures reported by the city health department. The physician was called back and took the cultures and found both of them

positive. They had the organisms in their noses, but they wanted the placards removed, and the father wanted to go back to work. When I got the report of the two children I told them I could not think of taking the placards off and permit the father to go back to work, until there were cultures taken from his nose and throat, and his wife's nose and throat. Singularly, the physician took no cultures at all, and when he took the cultures of the children, which were required to send them back to school, he seemed to forget that we also would insist upon cultures being taken from the parents' noses and throats. All of those were positive and that is when the trouble commenced. The father consulted an attorney. He got ugly, got very impatient. I saw an ugly situation developing; I saw something developing that I wanted to avoid, so I went to see the man personally. The mother came to the door and I spoke to her, tried to explain to her the reason back of this policy and the law, and the father came out and paced back and forth on the porch, absolutely silent, but I could tell by his expression that the outburst would come, and it did come. He was abusive, he spoke of the rules and regulations downtown, in the city of Milwaukee, if they only lived down there things would be different. The mother who had been a practical nurse in her day said she never heard of such humbug, keeping the children in the house when the child afflicted was taken away.

The attorney told them that there was no law that could compel me to keep this man and his family under quarantine. He added that if he only lived on Lake Drive, and owned a factory, and had a little change for the health officer, that sign would have come down long ago, and that we health officers, like the other officials of the village, are trying to make a job for ourselves, in order to be warranted in taking the fees that come to us. It would have been the easiest thing in the world to start a fight, but that is what I wanted to avoid. That man needed education. I pointed out to him, gave him the name of the man who did own a factory, whose child likewise had been afflicted with communicable disease. He did not want to leave his home on account of the condition of his wife, but his home was so built that we could not isolate him from the rest of his family unless he took quarters up in the attic, which he agreed to do, and then I consented to his living in his own house, conditioned upon his living in the attic with the door leading downstairs locked, and his having access to his quarters upstairs by means of a ladder. He had opportunity to investigate and he found out I told him the truth; and when I took the liberty to call his attention to the fact that I was spending my time and paying for my own tires, my own gasoline for the protection of his children as well as mine, and was not receiving a red cent from the village of Shorewood, he somewhat changed his tone.

I do not want to go into detail, but I want to say that ultimately this man changed his attitude entirely. I brought him a copy of the law and read it to him, and offered to turn it over to him if he was in doubt.

I got a letter from Dr. Ruhland, to show that the practice in the city of Milwaukee was absolutely identical with our practice on this measure, and it was then that he changed his tone, and he said this—this was a few days later—he said he had just lost two weeks because of the switchmen's strike—it was no fault of his, he was not a switchman, but his work was affected by the switchmen—and he told me he had just buried his brother-in-law, and I knew that was the truth, he had died of the 'flu", and he had to take the body up to Ontario, and that he could barely make both ends meet with the wages he was getting, that while he was willing and glad under ordinary circumstances to live up to the regulations, he felt that he could not deny the bread from his children in order to conform to something which was wholly for the benefit of the public and not for his benefit at all, and he was right. In no way would his leaving his home be a menace to himself; he would only be a menace to the public. His being confined was exclusively for the good of the public, and not for his good at all. He threatened to go out. While I told him I refused to quarrel with him, none the less I told him I would insist on his staying on his own premises; though I would dislike to do so, if he violated the regulations, I felt I owed it to the children of Shorewood to prosecute him the moment he violated these regulations. I finally got his confidence. When it was all over I said, "Mr. Ralston, I see you have made a sacrifice for the public; I feel that you are right when you contend that you ought not to carry that burden alone."

I went to one of the vice-presidents of the First Wisconsin National Bank who lives in Shorewood, told him the story, and I said this: "Do we want him to make that sacrifice for your children and my children, to carry the burden alone; isn't it worth your while and mine to raise a fund to offset his loss in wages; isn't it worth that much for the sake of law and order to keep this man a law-abiding citizen?" And he agreed it was. The fund was raised. He was repaid for what he lost, except what he lost for the overtime work that he would have done.

I want to add that unless we had done that I would have had a fight in the western end of the village, between the railroad tracks and the river. Instead I have a firm friend, I have an active propagandist, who instead of being a party to concealing cases is reporting cases to me now. I felt that it was worth while to swallow my pride and accept the abuse for the time being. He has been exceedingly penitent since; he apologizes profusely, his wife apologized for their original attitude; they are friends of the health department, they are friends of the children, they are propagandists for good health, they are a support to this program.

FOURTEEN POINTS ABOUT CANCER.

1. During the Great War the United States lost about 80,000 soldiers. During the same two years 180,000 people died of cancer in this country. Cancer is now killing one out of every ten persons over forty years of age.

2. Many of these deaths are preventable, since cancer is frequently curable, if recognized and properly treated in its early stages.

3. Cancer begins as a small local growth which can often be entirely removed by competent surgical treatment, or, in certain external forms, by using radium, X-ray or other methods.

4. Cancer is not a constitutional or "blood" disease; there should be no thought of disgrace or of "hereditary taint" about it.

5. Cancer is not a communicable disease. It is not possible to "catch" cancer from one who has it.

6. Cancer is not inherited. It is not certain even that a tendency to the disease is inherited. Cancer is so frequent that simply by the law of chance there may be many cases in some families, and this gives rise to much needless worry about inheriting the disease.

7. The beginning of cancer is usually painless; for this reason its insidious onset is frequently overlooked, and is too easily neglected. Other danger signals must be recognized and competent medical advice obtained at once.

8. Every persisting lump in the breast is a warming sign. All such lumps are by no means cancer, but even innocent tumors of the breast may turn into cancer if neglected.

9. In women continued unusual discharge or bleeding requires the immediate advice of a competent doctor. The normal change of life is not accompanied by increasing flowing which is always suspicious. The return of flowing after it has once stopped should also be considered suspicious. Do not expect the doctor to tell you what the matter is without making a careful physical examination.

10. Any sore that does not heal, particularly about the mouth, lips or tongue, is a danger signal. Picking and irritating such sores, cracks, ulcerations, etc., or treating these skin conditions by home remedies, pastes, poultices, caustics, etc., is playing with fire. Warty growths, moles, or other birthmarks, especially those subject to constant irritation, should be attended to immediately if they change in color or appearance, or start to grow. Avoidance of chronic irritation and removal of just such seemingly insignificant danger spots may prevent cancer.

11. Persistent indigestion in middle life, with loss of weight and change of color, or with pain, vomiting, or diarrhoea, call for thorough and competent medical advice as to the possibility of internal cancer.

12. Radium is a useful and promising means of treatment for some kinds of cancer, in the hands of the few skilful surgeons and hospitals possessing sufficient quantity of this rare and very expensive substance; it must not be thought of as a cure-all for every form of cancer. No medicine will cure cancer. Doctors and institutes which advertise "cures without the knife" play upon the patient's fear of operation in a way that leads too often to the loss of precious time, and fatal delay in seeking competent treatment. Go first to your family physician.

13. Open warfare by open discussion will mean the prevention of many needless deaths from cancer. The common belief that cancer is a hopeless malady is partly due to the fact that cases of successful treatment are frequently concealed by the patient and his family, while cases of failure (too often resulting from delay) are apt to become common knowledge.

14. The American Society for the Control of Cancer is a league enlisting the principal agencies and individuals of the United States and Canada who are striving to make headway against this formidable disease by a campaign of public education to make wider use of present knowledge in its prevention and cure. Annual dues are $5.00. Larger contributions are solicited. Checks payable to Howard Bayne, Columbia Trust Company, New York City, Treasurer. If the cause appeals to you, you can help by joining the League.

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SOCIETY PROCEEDINGS

EAU CLAIRE COUNTY.

The regular September meeting of the Eau Claire County Medical Society was held with the staff of the Luther Hospital, Monday evening, September 27, at Luther Hospital. Supper was served at 6:30, after which a number of case reports were read and Doctor King, pathologist, reported on the pathologic work being done at the hospitals in Eau Claire.

The October meeting of the Eau Claire County Medical Society was held in the class rooms at Sacred Heart Hospital, October 25th. After supper had been served, Doctor E. L. Mason read a paper on "Focal Infections—Their Relation to Systemic Disease."

E. L. Mason, M. D., *Secretary.*

KENOSHA COUNTY

The regular meeting of the Kenosha County Medical Society was held at the Elks' Club, Kenosha, October 6. Doctor Hubenny of Chicago addressed the meeting on the "Diagnosis of Appendicitis", which was followed by an informal discussion by the members.

MILWAUKEE MEDICAL SOCIETY

A meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot Building, Milwaukee, Tuesday evening, October 26, at eight o'clock. The program consisted of the presentation of various clinical cases and a paper on "The Clinical Interpretation and Value of Some Studies in Blood Sugar", by Dr. Soloman Strause of Chicago.

Oscar Lotz, M. D., *Secretary.*

MILWAUKEE COUNTY

At the regular meeting of the Milwaukee County Medical Society held at the Hotel Pfister, Friday, October 15, at 8:30 P. M., the following program was given: "Treatment of Influenzal Pneumonia," by Dr. A. J. Caffrey, and "Genito Urinary Tuberculosis," by Dr. E. A. Fletcher.

Daniel Hopkinson, M. D., *Secretary.*

NINTH COUNCILOR DISTRICT.

The members of the medical societies of the Ninth Councilor District met in Wausau, September 23. A clinic was held in the afternoon at St. Mary's Hospital where local physicians gave demonstrations of several interesting cases. This was followed by a clinic on diseases of the stomach conducted by Dr. Ralph Brown of Chicago. Supper was served at six o'clock ,after which the following program was given: "Enlargement of the Thyroid Gland in Children," by Dr. J. Vedder; "Radium Therapy," by Dr. K. Doege, and "Intestinal Diseases," by Dr. Brown of Chicago. Fifty physicians from Merrill, Marshfield, Stevens Point, Wisconsin Rapids and Wausau were present at the meeting.

TREMPEALEAU-JACKSON-BUFFALO COUNTY

The Trempealeau-J.-B. County Medical Society held its fourth and final meeting for 1920 at Arcadia, October 21. Fourteen of the twenty-one members were present, being the largest number ever in attendance at a meeting. The state and county society dues were fixed at seven dollars. The resolution adopted by the State Society at its annual meeting regarding the indiscriminate prescribing of liquor by physicians was endorsed by the county society without a dissenting vote. Dr. N. S. Simons, Whitehall, was elected president, and Dr. R. L. MacCormack, Whitehall, vice-president, for the coming year. Doctor Evans addressed the meeting on "Bad Fractures," illustrating same with lantern slides, following a supper given the visiting physicians by the Arcadia members at the Arcadia Hotel.

C. F. Peterson, M. D., *Secretary.*

WAUKESHA COUNTY

The Waukesha County Medical Society was entertained at the home of Dr. H. G. B. Nixon, Hartland, Wednesday afternoon, October 9. Twenty-one members of the society were in attendance. An interesting paper on "Radium Therapy" was read by Dr. J. P. McMahon of Milwaukee, who exhibited a small amount of radium. A luncheon was served the society by Mrs. Nixon.

WINNEBAGO COUNTY

At the regular meeting of the Winnebago County Medical Society held at the Mercy Hospital, Oshkosh, September 17, about forty members were in attendance. Doctor W. D. Stovall of the State Laboratory of Hygiene addressed the society on "Laboratory Technique Applicable to Office Diagnosis", which consisted of a discussion of methods employed by the state laboratory in developing cultures and how the physicians could best co-operate by proper preparation of specimens to be transmitted.

CORRESPONDENCE

Prof. Adolf Lorenz,
Vienna I, Rathhausstr. 21.

Vienna, August 28th, 1920.

American Relief Committee for Sufferers in Austria:

I acknowledge herewith receipt of Draft No. 41571 for 4,779,40 kronen according to your wishes and add my heartfelt thanks to you as well as especially to Dr. J. W. Jobling and his charitable co-operators, to all of whom I would write if I knew their respective addresses. Tell them, please, how much we appreciate their welcome endeavors to assist us in our plight, which seems to become more and more distressing. We must repeat it again and again, that the crippled state new Austria can't live by itself alone, having been deprived of all its former resources—not being able to produce more than the fourth part of food, wanted by its six millions of inhabitants and having neither coal nor the necessary raw materials to work into industrial articles, to buy food with, the crowns having become nearly worthless.

If this hopeless condition of new Austria is not grasped to its full extent by the outer world very soon, the twentieth century of progress and civilization will witness the spectacle, unheard of in the history of man-

kind, of a people doomed to die of hunger, although it is intelligent, skilful and willing to work.

With repeated warm thanks to the donors and to you, I remain,

Gratefully yours,
PROF. ADOLF LORENZ.

NEWS ITEMS AND PERSONALS

The hospital at Sturgeon Bay, formerly owned by Doctor G. F. Hilton, has been entirely remodeled and will be known as the Physicians' and Surgeons' Hospital. The officers of the corporation are: Dr. F. C. Huff, president; Dr. A. J. Kreitzer, vice-president, and Dr. T. C. Proctor, secretary-treasurer, who with Dr. H. C. Sibree and Dr. H. F. Hilton are now owners and directors of the institution.

Dr. T. F. Loughlin, who has practiced in Milwaukee for a number of years, has removed to Hartford to take up practice. Doctor Loughlin will specialize in diseases of the eye, ear, nose and throat.

Dr. J. Gurney Taylor of Milwaukee was elected a director for five years of the American Child Hygiene Association at its annual conference in St. Louis in October.

Increased patronage of Milwaukee County's free medical dispensary and demand for specialized work has necessitated additions to the staff. Dr. A. L. Kastner has been appointed as head of the department on pediatrics and Dr. F. J. Gaenslen as head of the department on orthopedics.

The Beaver Dam Hospital has recently completed a drive for funds. About $900 was raised in two tag days.

Thomas P. Kelly, connected with the "doctor show" recently held in Racine, was fined $250 and costs in municipal court, charged with "failing to file with the clerk of Racine County a certificate of registration authorizing him to practice medicine in the state of Wisconsin and with unlawfully engaging in the practice of medicine."

The county board of supervisors of Milwaukee County, recently adopted a recommendation of the finance committee to issue $340,000 worth of bonds to cover the expense of completing the new receiving ward for the county hospital at Wauwatosa.

Dr. A. J. Hodgson of Waukesha has disposed of his interests in the Still Rock Spa Sanitarium, Waukesha, to Dr. W. E. Nicely and Mr. R. M. Heath who have been associated with Dr. Hodgson for some time in the management of the institution.

The staff of St. Joseph's Hospital, Milwaukee, has announced that a monthly clinic—medical, surgical and diagnostic—will be held in the amphitheater of the hospital from eight to twelve o'clock on the second Thursday of each month. The clinic will be conducted by the entire staff of the hospital and all physicians are invited to attend.

Dr. S. W. Murphy of Kenosha left for the East, October first, to take a month's postgraduate course at the Harvard University Medical College in diseases of children.

Construction of the new $110,000 isolation hospital for Racine has been begun and it is hoped to have the building in such shape that it can be used this winter.

Dr. Henry N. Winn has located in Poynette to take up the practice of medicine. Doctor Winn is a graduate of Rush Medical College, Chicago, and has done considerable postgraduate work in New York, Philadelphia and Washington.

Dr. Daniel Hopkinson of Milwaukee has been appointed to the chair of professor of pathology of Marquette University Medical School. He will be assisted in the department by Doctors E. L. Tharinger and E. F. Barta.

Remodeling of the city council chambers for occupancy by the Green Bay Health Center has been completed. Heads of health departments throughout the state have been watching with keen interest the progress of the Green Bay health department, of which Doctor Gosin is the head, and it is now judged as one of the finest in Wisconsin and one of the most efficient in the middle west.

Dr. H. S. Steenberg of Milwaukee has received a commission as captain in the regular army. Doctor Steenberg served in the medical corps during the World War, since which time he has been attached to the Air Service Pilot School at Carlstrom Field, Arcadia, Florida.

Dr. M. H. Miller of Chicago will take charge of the practice of Dr. S. W. Forbush of Orfordville who will be absent for several months.

Endorsement of a proposal to build a Langlade County Memorial Hospital was given by the Langlade County Medical Society at a recent meeting. The plan endorsed was one outlined by Circuit Judge E. V. Werner. It provides for taking advantage of a recently passed state law permitting an assessment of five mills for the erection of a soldiers' memorial and to provide for sufficient maintenance funds. The judge proposed a campaign for subscriptions, the payment of which would extend over a period of ten years.

Dr. George D. Whiteside of Plover, has been appointed Red Cross Commissioner to Poland. He succeeds Dr. A. J. Chesley of Minneapolis, who has resigned and returned to the United States after a year's successful administration of Red Cross relief in Poland. Dr. Whiteside has been overseas for several months and is continuing the commission's work of medical relief and the distribution of hospital and general supplies and carrying on a fight against the spread of typhus.

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THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The American Red Cross and the Great War. By Henry P. Davison, Chairman of War Council of American Red Cross. New York: The MacMillan Co. 1920. Price, $2.00.

The Fundamentals of Human Anatomy, Including Its Border Land Districts. By Marsh Pittsman, A. B., M. D. 343 pages. 101 illustrations. St. Louis: C. V. Mosby Co. Price, $4.00.

International Clinics, a Quarterly of Illustrated, Clinical Lectures and Special Articles. Volume II, 30th series. Philadelphia and London: J. B. Lippincott Co. 1920.

Diseases of Children. By John Lovett Morse, A. M., M. D., Professor of Pediatrics, Harvard Medical School. Third edition. W. B. Leonnard Publishing Co., Boston.

Exophthalmic Goiter and Its Nonsurgical Treatment. By Israel Bram, M. D., Instructor in Clinical Medicine, Jefferson Medical College. St. Louis: C. V. Mosby Co. Price, $5.50.

Nursing Mental Diseases. By Harriet Bailey, R. N. 175 pages. New York: The MacMillan Co. 1920.

The Duodenal Tube and Its Possibilities. By Max Einhorn, M. D., New York. Octavo of 122 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $2.50.

An Epitome of Hydrotherapy for Physicians, Architects and Nurses. By Simon Baruch, M. D., LL. D. 12 mo. of 205 pages, illustrated. Philadelphia and London: W. B. Saunders Co. Cloth, $2.00.

Our Nervous Friends. By Robert S. Carroll, M. D. 258 pages. New York: The MacMillan Co. 1919.

Diagnosis and Treatment of Brain Injuries. By Wm. Sharpe, M. D. 759 pages. 232 illustrations. Philadelphia and London: J. B. Lippincott Co. 1920. Cloth, $8.00.

THERAPEUTIC AGENTS IN CHRONIC NERVOUS DISEASES.

In the final analysis, W. A. Jones, Minneapolis (Journal A. M. A., July 3, 1920), says that in the treatment of chronic nervous diseases, the personal influence of the man in charge has much to do with improvement and recovery, provided he is endowed with the qualities of a disciplinarian and the courage of his convictions after he has made a thorough and careful examination and has outlined a course of treatment that is right for the individual. The mere fact that people have faith in their physicians is confirmed all over the world; and when they are presented with a proposition put in a plain, common-sense and direct way, the cures of their physician far exceed all of the cures that are effected by the faker and the charlatan. But his inordinate modesty and his ethical sense prevent him from acquiring a widespread influence which might be of great benefit to others who know nothing of him, his methods, and the application of the scientific mind to the treatment of disease. Baths of simple type—warm tub, cool spray or Scottish douche—are of more value than many drugs. Exercise of the graduated type during the convalescent period is of tremendous value, provided it is carried over many days and weeks and with but moderate increase in the time given to such exercise. Sufficient examination should be made from time to time to assure the physician, as well as the patient, that nothing important is overlooked. The ordinary routine visits must be suspended at intervals to make this impression lasting. One person should be responsible for the patient, and only minor details should be left to subordinates. The patient should be left alone, and without a special nurse, as soon as possible; otherwise he becomes dependent on the nurse not only for his physical but for his mental habits. Massage is not absolutely essential either to the patient's comfort or to his improvement—that his state of mind and his attitude toward himself and others evokes sufficient mental activity to keep him physically fit. The coddling of patients should be eliminated. They should all be held firmly in hand by the personal influence of the attending physician, and this rule should not be relaxed until convalescence is well established. Occupation, unless it is carried on by a trained and skilled worker, is of very little value, and means only the use of time which might be employed in a more profitable manner.

HOW AMERICAN SOLDIER DEAD ARE TO BE RETURNED.

There are three rulings in regard to bringing the bodies of the American soldiers that died overseas back to this country.

1. All bodies of deceased soldiers that are buried in Germany, Luxemburg or Northern Russia are to be brought back to this country.

2. All bodies of deceased soldiers that are buried in other countries than those mentioned above or in France, are to be brought back unless the relatives request that the bodies be left abroad.

3. All bodies of deceased soldiers that are buried in France are to be brought back only upon the request of the nearest relatives.

The War Department has arranged with the American Red Cross to notify the next of kin at the time of the arrival of the bodies. The War Department will notify the Red Cross, which will transmit the information to the Home Service section in the locality in which the relatives live. In this way it is expected that the Red Cross will be able to get in touch with all relatives to whom the message is of vital importance far enough in advance to allow sufficient time for the completion of all arrangements for burial.

The Wisconsin Medical Journal

Volume XIX · Milwaukee, December, 1920 Number 7

ORIGINAL ARTICLES

THE NERVOUS CHILD.*

BY SMILEY BLANTON, B. S., M. D.,
UNIVERSITY OF WISCONSIN.

The nervous system of the human animal, from infancy until the changes of adolescence are complete, is in a state of unstable equilibrium.

It is some time after birth before the mechanism for the regulation of heat is well enough adjusted to keep the body at approximately the same temperature irrespective of the variations in the temperature surrounding, and it is far along toward adulthood before the mechanism becomes so stable that it is not affected by slight irritations, infections and fatigues.

In infancy and early childhood reverse peristalsis, causing vomiting, occurs in response to the slightest stimulation, whether due to a local irritation in the stomach or bowel, or to the presence of an unpleasant emotion.

The sphincters of the body are poorly controlled.

The necessary stabilizing reflexes used in coarse motor expressions and in the finer motor expressions, such as talking, are not firmly established until far along toward adolescence.

The cerebral-spinal system has not yet established its control over the sympathetic division of the autonomic nervous system so that cardio-vascular changes, changes in the rhythm of the heart beat, and sweating, occur upon very slight provocation.

On the whole the threshold of irritability of the nervous system is very low, and the whole system may be compared to a new telephone system where the connections have not yet been made good, wires are not entirely straightened out, and the operators are untrained.

This instability of the nervous system is present in all children to a greater or less degree—those in which it is much exaggerated are called "nervous children"—and this instability is reflected in the mental sphere. Doctor Cameron, pediatrician to Guys Hospital, London, says, [1]"Evidences of mental unrest or fatigue, which is only rarely met with in grown up persons and which then betokens serious disturbance of the mind, is of comparatively common occurrence in little children. Habit spasms, bed wetting, sleep walking, night terrors, and convulsive symptoms which are frequent enough in children[2], broken and disturbed sleep, absence of appetite, and persistent refusal of food, gastric pain and discomfort after meals, nervous vomiting, morbid flushing and blushing, headache, irritability and excessive emotional display, at whatever age they occur, are indications of a mind that is not at rest."[3]

A study of the developing life of the child shows quite clearly how these symptoms arise and how, often, they are prolonged long after the original cause for them has disappeared. The young child is a bundle of instinctive cravings and desires, he is extremely egocentric, wishing only for his own pleasures and comfort. His education, in the broad sense, is the process of socializing these desires and cravings, and of changing him from an entirely egotistic animal into one willing to subordinate his individual comfort and welfare to group welfare.

This process of the socialization of the primitive instincts is fraught with danger, it is too little understood as one of the problems and duties of parents and physicians and is left too wholly to the chance routine of family and community life. It is not strange that conflict arises in this socializing process, and shows itself in various physical symptoms.

In the social routine, the young baby holds an omnipotent place. His desires, his food habits, his sleeping arrangements dominate over that of other individuals in the group. That he should wish to retain this omnipotence is human, and his attempts to retain this omnipotence, wisely directed, may make a forceful individual willing to stand by his ideals and beliefs. But if these desires, these simple elemental cravings are not given some outlet in a socially useful way we have the sick individual,

*Read before the State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

the so-called "stubborn child", "temper child", and in the extreme cases, either the anarchistic radical or the individual who breaks with his social obligations altogether in Dementia Praecox reactions.

At adolescence is added the enormous sex urge with its new social and emotional adjustments into which the child must enter essentially alone, even with the wisest guidance,—a thing which is rarely given.

The child's great problem is the constant meeting of new situations; it is then no wonder that he makes use, unconsciously, perhaps, of illnesses and of various symptoms which have been found useful. If an organic headache keeps him from school at one time when there would be difficult situations to meet, it is not to be wondered at that a functional headache should occur when the same situation occurs again. Then we say that we have an organic symptom resurrected or prolonged by neurotic or psychoneurotic or hysterical mechanism.

Once a situation has been met successfully—from the point of view of the patient—by this mechanism it is only a step to the unconscious assuming of symptoms, and illnesses, and to the other less efficient ways, socially, of meeting life, which constitute the so-called "nervous breakdown" or mild maladjustments of childhood, and on through these to the invalidisms, physical and mental, by which a person is able to escape the still more difficult adjustments of adolescence or young childhood.

The morphological-pathologist's conception of disease is, as Doctor Adolf Meyer points out, somewhat as follows: [4]"Every instance of real deviation from the normal is identified as disease, and each disease has its lesion or anatomical foundation known and at times explained or only known as post mortem findings but as yet unexplained." This conception has served medicine well and is perhaps sufficient in dealing with such disease entities as typhoid fever, tuberculosis, the pneumonias and like diseases. But alone it is entirely inadequate when disorders of the nervous system and deviations in behavior are considered. Here we often have to deal with a functional pathology.

It is freely admitted that in nervous children there is often a nervous system, and probably an endocrin system as well, that is of poor structure; but many physicians who deal with these cases are convinced that it is not necessary to assume intoxications, hypothetical infections, or organic lesions of various kinds in order to explain the symptoms adequately. The normally unstable nervous systems of these children, plus the poor or wrong environment and training develop whole systems of faulty habit reactions which may cause most complicated and confusing symptoms.

For example a girl of nineteen complained of being "very nervous"; she had chronic indigestion, with the usual picture of enteroptosis, poor physical poise, weak voice, poor color and querulous disposition. She vomited frequently and this occurred just after her meals. There was no nausea with her vomiting. She had been previously diagnosed as probably having stomach ulcer.

A careful history revealed the following: The patient was an only child, indulged and spoiled. The vomiting had started at about the fifth or sixth year when the mother had undertaken a belated routine of enlarging the child's diet. At present this vomiting always occurs when the patient has something unusual or difficult to do. An examination in school or college nearly always causes it if the subject is one which the patient considers difficult, and she escapes many hard situations through this symptom of vomiting.

A study of her habit reactions showed that it was when the child was called on to meet new situations in the guise of becoming accustomed to strange foods that the vomiting began. Perhaps there may have been an organic basis on some one occasion, although I am not convinced of this. Unconsciously she had met new hard situations with this, to her, useful mechanism, and it had proven so useful that it had prolonged itself into a hysterical mechanism of major character.

Vomiting, especially of a recurrent or cyclic character, may be caused by a purely emotional disturbance, without the presence of acidosis or any infections or organic disturbance and in such cases no diagnosis is complete which does not contain in addition to the study of the organ itself and the functioning of the organ itself, the functioning of the personality as a whole, and of the habit reactions, and emotional disturbances that may be present in the role of a causative factor.

MALNUTRITION AND FOOD REACTIONS.

The nursing and food reactions of the young infant are very indicative of the excellence or poorness of its general nervous make-up. [5]Mrs. Blanton, in her psychological studies, found that children whose parents were of low grade mentality had poorer swallowing reflexes than those of par-

ents who were mentally fit. The mothers are not permitted to take the infants from the hospital until the food habits are established, and it was found that, omitting surgical reasons of one sort and another, those children who remained for the longest periods in the hospital were in direct ratio to the lack of intelligence of their parentage. Children of good parentage made an uneventful record and left at the usual 7, 8, 9 days. Children of high grade morons did less well, and so on, to the child at the other end of the list, who remained three months, who was fed with a tube, and who was the child of incestuous relationship, its parents perhaps not having an intelligence of more than five years. Not only were swallowing reflexes of these children poorer but also the tendency to regurgitation and vomiting of the type in which the food is thrown with great force even to a distance of a number of feet. Even where there was no obvious disturbance of the digestion in these children, they often failed to gain weight; and this was also true of the children of parents of a psychopathic type, or a neurotic type. In these cases there was no particular abnormality of the swallowing reflexes, so much as that there seemed to be an inability to form regular and healthy food habits. After nursing a short while they would release the nipple, turn away, cry, regurgitate, or go to sleep. Not having nursed properly they would wake early and cry exceedingly before the next feeding and be in such a state that again the disturbance at the nursing hour occurred. Colic was more common in these children, and consequent bowel disturbances and curds in the stools. Most often there is nothing to be found in the mother's milk that is disagreeing with the child, but the mother, in addition, worries and frets and changes the relative content of the milk in regard to the internal secretions and the milk becomes unfit for consumption.

It is absolutely essential that children of neurotic parentage be taught regular and healthy food and sleep habits if later trouble of a serious nature is to be avoided. Of course, all physicians recognize this, but it has been thought of mainly as a measure of physical hygiene; it is equally as essential as a measure of mental hygiene, for the food and sleep habits are the first field in which adjustments to life are to be made, and if habits of faulty adjustment are made, the child has received its start in the wrong direction. These nervous children are often much above the average in intelligence, and splendid achievements may be expected of them if they are given the proper habit reactions in their infancy.

Unfortunately, most often the proper habits of eating are not given and the infant who has dominated and virtually selected his own diet grows into the finicky child with whom we all have to deal; the child who suffers from indigestion, constipation and vomiting, who is unable to eat this dish or the other, whose diet remains virtually infantile in character, and often greatly lacking in the vitamine bearing foods. These children often refuse milk also. One child seen lately refused milk at the age of seven months, selected his own diet apparently by the refusal method, would eat nothing but baked potatoes, baked apples, and occasionally the highly sweetened and starched baby foods. This child at seven years, dominates the household —but is unable to go two blocks alone to school; uses a huge vocabulary—not one word of which can be understood by anyone other than the mother and the father, and has the gait and the general appearance and behavior of a three-year-old child.

Another case may be mentioned of a child whose whole diet consisted of potatoes and jelly and gravy. Milk, meat, excepting an occasional bit of white meat of the chicken, vegetables and fruit, except in jelly, were all taboo.

In fact with scarcely an exception will these neurotic children be found to have abnormal food habits. In our clinic for the children with defective speech we have our children present, daily, the diet card filled out for each meal, showing the variety of foods, and it is rarely that we have, at the beginning, a diet sufficient in the vitamine bearing foods to insure balanced growth.

This is bad physical hygiene—it is worse mental hygiene. A child that does not adapt in the food sphere will usually be found unable to adapt at home and on the playground. Above all will they be found in a high percentage among those who have failed to adapt in the functioning of the speech organs.

NOCTURNAL ENURESIS.

Nocturnal enuresis, continued beyond the age of infancy, is a grave sign of danger, indicating in most cases an unstable nervous system. Children of good stable stock can be taught at a very early age to control the bladder sphincter, and by the age of three this lesson should be learned well

enough that it has become only the most occasional problem.

Children of subnormal mentality frequently suffer from this condition, in fact it is rather rare to find a child of this type in whom nocturnal enuresis is not somewhat frequent.

In some cases this condition is due to the irritation caused by bladder infection, in a few to organic nerve lesion, but these conditions are relatively rare in comparison to the large number that are purely functional. Given an unstable nervous system, and any small local irritation, or phimosis or too acid urine, may bring on or prolong the condition. It is maintained by some investigators that the tone of the smooth muscle comprising the sphincters, is largely maintained by the pituitary and that enuresis is due to hypopituitarism and that small doses of the entire pituitary are efficacious. I have been able to obtain fair results while giving this medication, but, as at the same time the entire routine and regime of the child was changed, I do not feel certain as to the factors that brought results.

Very good results have also been obtained by some recent investigators in giving minute dosages of atropine sulphate. The dosage was as small as one one-thousandth and this minute dosage acted as a stabilizer of the autonomic nervous system. This dose of atropine sulphate was also given to infants under one year for general nervous nutritional disorders with good results.

Thyroid extract has been used, but, as far as I am aware, without result.

The best results, granting good intelligence in the subject, is to change the primitive anti-social reflex to a social one by talking over the trouble with the child and arousing his interest, and in addition to this to assist the unconditioned reflex to become conditioned by such devices as sentences to be learned and repeated at bedtime, and at micturation, etc.

Where these simple hygienic measures do not answer, a more prolonged study will usually show that there is a relationship between the enuresis and masturbation. Often the enuresis is a surrogate for the masturbation and when the child's mental processes are analyzed it will be found that there have been sexual dreams, often distorted and confused, but nevertheless surely present, in which the enuresis took the place of orgasm. This, even before the age of puberty.

Several reasons present themselves which indicate the necessity for being careful in diagnosing this condition as due to acidity or small irritable bladder: first, the urine is usually of low specific gravity and there is often polyurea and second, if the bladder were too small or too irritable with this polyurea there would be incontinence by day as well as by night, especially when the child was unable to empty his bladder for several hours. Yet these cases do not, as a whole, show greater day frequency of urination than the normal. And the fact that these cases are inclined to have polyurea indicates that there is here some over-activity of the sympathetic or of the autonomic system.

Most often it will be found that in this way the child dominates the environment; it ties the child to his infancy and helps to continue the period of supremacy. Certainly in most of these cases there is a psychogenic factor and in evaluating this symptom we must consider the child's suggestibility, both of the negative and positive type, his dependence on the family, the presence of peculiar food adaptability, failure in speech, and night terrors.

In a case seen recently, the psychogenic factor was very plainly demonstrated. This boy of ten was accustomed to wet the bed several times a week; just before Christmas he was told that he would get special rewards if he quit, and for a whole month there was no trouble whatsoever. Unfortunately, the reform was short-lived, and a few days after Christmas there was a complete relapse.

MASTURBATION.

Masturbation is a natural stage through which most boys and many girls must pass. It is perhaps serviceable to the organism in that it narrows the eroginous zone and centralizes the sexual pleasures in the genital organs. It is an infantile stage through which the human animal passes on the way to adolescence. It is only when this infantile stage is prolonged that it becomes a menace to procreation and hence a menace to the individual. And this infantilism is often carried into the teens of these nervous children.

Most of the harm done by masturbation is through the unwise and untrue statements made by parents and others in an effort to stop it. I know of cases in which ministers of the gospel have told children that this was the sin against the Holy Ghost, the unforgivable sin, and the statement that masturbation causes insanity and even decay of the backbone are not uncommon. Junge gives the case of a child whose mother threatened

him with amputation of the penis if this practice was continued, and describes the severe neurosis which followed. The cases of unwise handling are so numerous that it is difficult to select from them. That of a certain boy of seventeen years will, I believe, be especially interesting to you. This boy complained of a severe pain in his back dating from a slight twist given in a football game. The pain was so severe that he could hardly walk although a physical examination and all laboratory findings were negative.

He has been reared in a very religious atmosphere and has been told by his parents that masturbation would cause his backbone to decay, and that it was the worst sin that he could commit. This was at about the age of thirteen, when he stopped the practice except for four or five relapses. But the fear of the consequence of it still lay heavily on his mind. When the slight accident occurred on the ball field he went to a physician who took a Wassermann, explaining to him that he might have syphilis. This frightened him very much although the test was negative. He grew worse and finally came to the Clinic with the expectation that we would pronounce his doom, and with the firm belief that the disintegration of the spine was due to his having masturbated. When the whole mechanism from which he was suffering was explained to him, and decent sex enlightenment was given, the symptom promptly disappeared.

Sex-education is good mental hygiene.

HABITUAL MOVEMENTS OF VARIOUS SORTS.

Another large group of nervous disorder with which the general practitioner is called on to deal is that which includes myoclonia, tics, habit chorea, somatic paranoid insufficiency tics, and habit movements of a great variety.

I shall not take your time to describe these disorders with which you are familiar, except to point out the simple fact that unconscious mechanisms are only accentuated by attempts at conscious control. Parents have an unfortunate belief in the efficacy of the word "don't" and nagging or calling attention to this group of disorders only sets the habit in the mechanism.

Myoclonia in children, with its many subdivisions is very likely to be diagnosed as chorea, as are also the habit choreas, which rarely result from a true chorea. The myoclonias are relatively ineducable, the tics and habit movements somewhat more hopeful, whereas the somatic paranoid insufficiency tics in which children break into foolish habits of various sorts when life becomes too difficult for them, are indicators of possible serious oncoming disorders of adjustment.

SPEECH DISORDERS.

In no field does the general behavior and adaptation of the child show itself so keenly reflected as in the specialized type of muscle activity which results in speech. Speech is a delicate thermometer on which is registered the intellectual as well as the emotional attainments of the child. Its lack of development is usually based on one of two things, lack of necessary intelligence or lack of the psychic weaning which must come before the child finds the necessity for speech imperative. Children should be able to communicate by means of spoken language at the age of three. Something is radically wrong either in the intelligence or the adaptive life if this is not so. Of course, some children do learn speech later. Nevertheless we cannot safely afford to say that a child will "outgrow" this trouble, for it is essential that he learn speech at this early period in order that the development of the following period may not be hindered. Among the disorders of speech, stuttering (which we use as inclusive of stammering) is the most serious. It may not be considered a disease entity, but should rather be treated as a symptom of some underlying more fundamental disturbance.

We may distinguish three types, although they are often overlapping. The first, the hysterical type, was often seen in the war neuroses. A case from our Speech and Mental Hygiene Clinic at the P. H. S. Hospital at Waukesha illustrates this type nicely. A soldier who was set to guarding German prisoners grew very tired with riding on cold trains and standing guard. One night when challenged by the officer of the guard he was unable to respond. He was, of course, relieved from duty; this complete loss of speech followed the usual course of such cases and became less complete, when we called it a stutter. The stutter remained so severe that he was released from the service and became a hospital case.

The second type may be called the psychoneurotic type; there are mental conflicts, feeling of inferiority, undue sensitiveness, undue egoism along certain lines, inability to meet the world on its own level. It bears some relationship to the

somatic paranoid insufficiency tic and is, of all the types, the least amenable to educative measures.

The third type is the neurotic. In these children there is a relatively good and normal adjustment in the emotional life although the activity of the child is too great, the general reaction to every situation too keen and quick. There is here, quite commonly, also some endocrin imbalance.

The emotion aroused by the maladjustment would reasonably be expected to strike this most delicately balanced mechanism used in the control of speech when it is recalled how such a group of disorders affect the general muscular co-ordinations, and that speech requires such relatively accurate and fine movement that it has been computed there are approximately 300 movements of the tongue alone in one minute's speech, and that a difference of one twelve-thousandth of an inch in the vocal cords changes the manner of response.

Whether these estimates are correct or not the relative difference in size of muscle movement in the use of the leg muscles in walking, for instance, and the vocal cords in talking will be apparent and the precision required for co-ordinated speech movement realized.

Lisping and oral inactivity are sometimes caused by deformities of the mouth, mal-occlusion, enlarged tonsils, adenoids, abnormal uvulas, etc., that obstruct the nasal and oral passage. The examination for such conditions covering a large number of cases, and a careful correlation with the speech activities, have convinced us that the relationship is much slighter than has been supposed. For instance, in an examination of a group of cases on Randalls Island, New York City, among the two upper grades of the mentally deficient the correlation was greater between intelligence and good speech than between oral formation and good speech; and in addition to this correlation in the University of Wisconsin Speech Clinic, we find the correlation much higher between behavior disorders and poor general attitude and poor speech than between poor oral formation and good speech.

One of the most serious types of speech disorders, ranking with stuttering in its difficulty of eradication, is the extreme degree of oral inactivity or paratension known as idioglossia or individual language. In the group of cases of which we have so far made a study there is a direct parallelism between the speech, the general behavior, in so far as "spoiledness" is concerned, the food habits and, although our group is not yet large enough to prove any disorder of the endocrin system, there is a high percentage of disorders of the thyroid in the families and near relatives of these children. Their food pictures are typical. They have usually been permitted from infancy to choose their own diet and it is customarily greatly deficient in the vitamine bearing vegetables, in milk and in meat. There is usually a history of early food disorders, there is often a history of goiter in the mother, these children are often only or youngest, emotionally they are unweaned, and the speech acts as a tie to the mother who must often go along with the child, literally, to translate. If the assistance of the parents and family physician can be secured these cases may be considered very educable, but they must be retained in all their reactions to life, food, sleep, play, etc. As Doctor Campbell has so aptly said[6] "To train the child the parent has to train himself or herself", and with this group of cases this is the point of difficulty.

CONCLUSION.

Polack and Furbush in the census of 1918 found that there were in institutions, 239,320 insane and 11,944 epileptic, exclusive of the feebleminded epileptic. This total of 251,264 will, I am sure, appeal to you all as an underestimate of the total number of such people when you remember the high percentage of mild cases which are never institutionalized. As Terman has pointed out:

"The vast majority of these cases were, a few short years ago, in the public school systems of the country," and as I may add, were usually under the care of our profession in some degree. Some of these cases were organic and could never have been entirely avoided, but many, 40% according to some investigators, are of the functional type with a constitution sufficiently strong and a heredity sufficiently good that with early diagnosis and change of routine and regime they might easily have been saved.

Ordinary physical examination even aided by all the laboratory and X-ray findings, is not sufficient when we deal with children's diseases, whether it is the simplest bodily ailment or disorders of behavior. We must look for the background of the child and study the setting of the symptoms and the child's emotional life. Nor will therapy based on the physical findings be adequate.

Often, we know, that what has been called the "mental attitude" of our patients is the greatest factor in healing, just as confidence in the operator is half the surgical battle, because of the calm frame of mind engendered and the consequent lack of pull on the endocrin system,—so a calm, well ordered, independent psychically weaned child whose mind is at rest from the emotional pull of sex problems, and the problems of family financial worries, and family bickering, has fought half the battle with you in the physical ailments of which he may be the victim.

If this attitude and these habits of reaction are not present the problem becomes one of mental hygiene as surely as physical hygiene, and as a measure of prevention must eventually rank first.

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GROUP DIAGNOSIS AND GROUP THERAPY.*

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GROUP WORK AS A PHASE OF PROGRESS.

You have invited me to speak to you upon some phase of the progress of clinical medicine. Present day workers in this subject, impressed by the rapidity of change in the conditions under which they work and by the breakneck speed with which advances have lately been made, find it hard to believe that the idea of human Progress could be challenged or that the very idea itself is of recent date. Professor Bury† has, however, in a contemporary volume shown very clearly that it was not until the seventies and eighties of the last century that the idea of Progress became at all general as an article of faith among educated people, some holding it "in the fatalistic form that humanity moves in a desirable direction, whatever men do or may leave undone", others believing "that the future will depend largely on our own conscious efforts, but that there is nothing in the nature of things to disappoint the prospect of steady and indefinite advance". The idea of Progress developed but slowly. It could scarcely be cherished when men entertained the older schemes of the universe in which life on this earth was disparaged or when, even among the most intelligent investigators, there was no recognition of the immutability of the laws of nature. It was only through the development of modern science, the slow growth of rationalism, and the unceasing struggle for political and religious liberty that the idea of Progress, the conception of the perfectibility of human society, and the hope that this earth, itself, may become "a place fit for reasonable beings to live in" could emerge and gain general acceptance. Since 1914, events of tragic memory have given to the holders of this conception, and of this hope, the rudest of shocks. It is but little wonder that some, in despair, should have reverted to the pessimistic theories of Regress and, like Rousseau, have challenged all optimistic and melioristic theories of civilization, or should have gone even further and declared that "civilization is the *causa malorum*". One of my friends, however, who maintained his hopefulness through those dreadful years of the war, has made the cheerful comment: "In future times, our period will be less remembered as that of a 'Great War' than as that of the age of the theory of relativity as expounded by the great Swiss physicist and mathematician, Einstein."† And this may prove to be true. Despite calamities, the human intellect goes on, with its task of enlarging knowledge and of improving the condition of individual and social life.

Medicine, as a science and as an art, has both benefited from and contributed to the prevalence of the idea of Progress. Since 1870, the growth of the medical sciences, preclinical and clinical, has been unprecedented. Thanks to an ever-increasing substructure in the sciences of physics, chemistry, biology, psychology and sociology, and to the adoption in the study of disease of the methods and the

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*Address in Medicine at The Tristate District Medical Society, October 7, 1920.

(†Bury, J. B. The Idea of Progress; An Inquiry Into Its Origin and Growth. London, 1920, Macmillan & Co., p. 377.)

(†cf. Harrow, B.) From Newton to Einstein: Changing Conception of the Universe. New York. (D. Van Nostrand Co.), 1920, 74 p.

principles of these sciences, the pure science of medicine has been built up into a great structure, the constituent facts and laws of which are constantly being utilized by workers in applied medical science to the improvement of the medical art. We observe a chain, each link of which is essential. Without the idea of Progress there could be but little incentive to investigate the laws of nature; without the natural sciences, the pure science of medicine would lack a solid basis; without a pure science of medicine, the applied sciences of diagnosis and therapy would continue floundering in the bogs of empiricism; and without the persistent efforts of enthusiastic applicators of the truths of pure medical science, practitioners of the medical art could make but little improvement. For the welfare of human society it is desirable that all of the several links in this chain shall maintain equal strength. And this equivalence of strength can be kept up only if the supply of forgers for each link be steadily recruited and the workers feel, and live up to, their responsibilities.

Among the newer mechanisms devised by students of the applied science of medicine, none is at the moment more interesting, perhaps, than Group Diagnosis and Group Therapy. It is upon this method of organizing clinical work and upon the technique of its execution that I am to speak to you today. The products of applied science are often, at first, but clumsy contrivances, which it is the province of those who work with them gradually to improve upon. This is certainly true of the machinery thus far devised for diagnosis and therapy by groups. It is to be expected, however, that the awkwardness, dangers and difficulties of the instruments now in use will in time, like those of primitive automobiles, aeroplanes, and associations of nations, give place through unremitting thought and diligent practice to less bunglesome devices that will be better adapted to the performance of the required tasks. If my brief presentation of the subject to you, today, should in any way contribute to this end, I shall feel well repaid. The topic is one in which I am personally much interested and I am glad to have the opportunity of discussing it at this meeting of the medical practitioners of three of the greatest states of the Union. The subject chosen is much too large to be dealt with in a short time in all its intricacies and details. With your permission, I shall limit my remarks to a brief statement of what group diagnosis and therapy mean, to some comments upon the changed conditions of medicine that have made them advisable, to a discussion of the principles that underlie them and the methods of organization that have thus far been introduced for utilizing them, and to some remarks upon the functions of group work, and upon the difficulties and dangers that confront it. Despite the objections that may be urged against it, group work in diagnosis and therapy would seem to have come to stay, for it is, I believe, in line with our general ideas of progress.

DEFINITION OF GROUP DIAGNOSIS AND GROUP THERAPY.

Succinctly stated, group diagnosis and group therapy mean the systematic application of the principle of division of labor among medical practitioners of different functions (1) to the general diagnostic survey of patients, (2) to the treatment of any maladies from which they may suffer, and (3) to the ordering of the physical, mental and social activities of these patients to the best interests of themselves and of the society in which they live.

An efficient diagnostic and therapeutic group, considered as a whole, thus becomes a kind of glorified general practitioner. For, on the diagnostic side, the group yields to the patient the advantages derivable both from thorough analysis and adequate synthesis; skilful specialists analyze the conditions existent in particular domains (circulatory, respiratory, hematopoietic, digestive, urogenital locomotor, neuropsychiatric, metabolic and endocrine) using any of the methods (physical, chemical, biological, psychical) that can be of help in the accumulation of data, and afterwards, integrators, made competent by training and experience, synthesize the findings into a well-proportioned view of the patient's total physical, mental and social status; and, on the therapeutic side, through a similar delegation of agencies, the patient is assured of the expert application of any remedial measures (general or special surgery, dentistry, nursing, dietotherapy, pharmacotherapy, immunotherapy, mechanotherapy, hydrotherapy, climatotherapy, electrotherapy, radiotherapy, psychotherapy or occupational therapy) that a comprehensive plan of treatment, based upon the general diagnostic survey, may call for. The group acts as a unit doing what a single general practitioner could do if he possessed all the knowledge and all the skill of each of the group components and could multiply his available time and energy to apply them.

EMERGENCE OF THE GROUP IDEA IN DIAGNOSIS AND THERAPY.

The idea of diagnosis and therapy by means of organized groups has developed gradually as a necessary response to the changing conditions of knowledge, technique and civilization. One has only to look back to the state of science, of medicine, and of society in the middle of the last century and to contrast it with that of our time to become conscious of the amazing changes that have taken place. The observational has been happily supplemented by the experimental method. Rough and ready approximation has yielded ever more to precision of measurement. The natural sciences have undergone an astonishing development. Physics, chemistry, biology, psychology and sociology have blossomed and borne fruit. Matter and energy have become better understood and man, busily engaged in subjecting them to his control, has brought about an industrial revolution.

Medicine, in line with the general advance and seeking better foundations for clinical work, has created, in addition to the older anatomy, physiology and pathology, a whole series of preclinical sciences (embryology and histogenesis, pathological physiology, biological chemistry, pharmacology, bacteriology, immunology, and psychopathology). Through these, the pure science of medicine has accumulated a vast store of facts and has established an important body of principles. The rise of specialism in medicine and surgery has resulted from the efforts of clinicians to apply our newer knowledge and our modern technique to the diagnosis and treatment of disease. Clinical laboratories have been organized in which the fluids and excreta of the diseased body (blood, sputum, stomach juice, duodenal contents, urine, feces, cerebrospinal fluid, pathological exudates) can be examined by physical, chemical and biological methods. Medical and surgical specialists have devised, in great variety, instruments suited to the examination of special domains. The cleverly-contrived investigative armamentaria of the ophthalmologist, the aurist, the rhinolaryngologist, the haematologist, the cardiologist, the gastrologist, the dentist, the urologist, the gynecologist, the orthopaedist, the neuropsychiatrist, the clinical bacteriologist, the clinical chemist and the roentgenologist have become so elaborate that special knowledge and special skill are requisite for their expert application in practice. No single person can, any longer, hope to attain to equal skill in the use of all of the many instruments and procedures of diagnosis. And the same may be said of the complexity of modern therapeutic technique. No general practitioner, no general surgeon, no general internist can any longer, unaided, give to patients the benefits that they can, in the more obscure cases, derive and have the right to expect, from his efforts when combined with the properly co-ordinated (and subordinated) activities of a group of adequately trained medical and surgical specialists.

The medical profession and the laity, more or less conscious of the markedly altered circumstances, have been making their respective adaptations to these rapid transformations of knowledge and technique.

The representatives of medicine have responded in various ways. Far-seeing medical men have persuaded philanthropists to endow medical teaching, research and custody. Medical education has been compelled to undergo an enormous and very costly expansion in order to keep pace with progress. The medical schools with their teaching laboratories and hospitals are being placed upon a university basis better to supply general instruction for students in the preclinical and the clinical sciences. Postgraduate schools are being equipped for continuation studies in medicine and for the training of specialists. Great research institutions are being developed for the solution of special problems in medicine by original investigators. Private hospitals and sanatoria are undergoing multiplication in order that patients may conveniently secure the best diagnostic and therapeutic services of physicians, surgeons, and nurses under a single roof, relieved from the embarrassment and lower efficiency of domiciliary care. And general practitioners, medical and surgical specialists, and diagnostic and therapeutic integrators are discovering the advantages of co-operation as contrasted with isolation and competition and are forming groups of various sorts by which medical practice is conducted to their own greater satisfaction and to the increased benefit of their patients.

These radical changes in medical instruction, research and practice have been accompanied, indeed in no small measure caused by, a change in the attitude of the more intelligent of the laity. The educated layman could not long remain ignorant of the advances in general and medical science, of the importance of differentiation of function and of division of labor in all vocations, or of the superior results that are obtainable in the solution

of problems through analysis and synthesis by groups of experts. When the layman found that his family physician had difficulty in solving a medical problem and was dilatory in calling specially trained experts to his aid, he consulted of his own accord, a surgeon or a medical or surgical specialist. The surgeon or specialist thus chosen might luckily happen to be one suited to the needs of the particular case; too often he was not. For some "'specialists" are narrow-minded persons and, in blissful ignorance of fields other than their own, actually do harm to some of their patients through their efforts *aus einem Punkle zu curieren.* But perplexity was responsible for the layman's floundering; he was simply struggling to find somewhere the relief that the growing reputation of specialism seemed to promise him. Sometimes, such a layman would enter the public ward of a teaching hospital for study, having learned of the all-round examinations made there. But in them, and even in the private wards of teaching hospitals, the work may be conducted by men so enthusiastic over original research in a limited field that they overlook the importance of a general diagnostic survey and neglect it, or if they make it are content with diagnosis alone and fail to institute a desirable and comprehensive therapeutic regimen. And when, later on, complete general diagnostic surveys preparatory to carefully-planned therapy began to be conducted by well-organized groups of private general and special practitioners, the layman warmly welcomed them for they bridged the gap that had halted him. And, recently, he has tended to apply to such groups for a "general overhauling" not only when ill but also from time to time when apparently well, for through education by life insurance companies, by organizations like the Life Extension Institute, and by public health officials, he has glimpsed the significance of prophylactic measures.

The group-idea in medicine is in line, too, with the general tendency toward association and cooperation in modern society. We see the same tendency in other professions (e. g. the law), in the industries, and in political life. As the peoples grow more democratic, groups replace individuals, and tend to become ever larger and more firmly knit together. Though the "Big Animal" does not disappear, he is less in evidence. The bigger a man is, nowadays, the less he attempts a splendid isolation, the more he merges his personality in the membership of a group for he knows that, through the subtle interpenetration of the minds of its several members, feats become possible that are beyond the achievement of any isolated magnate.

Clearly, then, group medicine is a logical development. It is the natural consequence of modern conditions. It is the inevitable resultant of the growth of science, the rise of specialism, the increased intelligence of the laity, the general tendency to co-operative association, the prevalence of the democratic spirit, and the recognition of the advantages of group-psychology.

THE ORGANIZATION OF GROUPS AND THEIR FUNCTIONS.

It is to the glory of the medical profession that its better members have thought always first of the welfare of their patients and only afterward of their own. In no occupation other than that of medical practice has there been a greater cherishing of the ideal of self-realization in the service of society. Methods of organizing work that are not in conformity with this ideal have no place in the practice of medicine. But it is, above all, because the properly organized group of practitioners offers and achieves a greater service to the public and a higher self-realization for its components than is possible for isolated individuals that this form of systematized diagnostic and therapeutic activity is justified. Loyalty to their patients and the best employment of their own faculties are the essential principles that should govern the conduct of members of a medical group.

Groups for co-operative diagnosis and therapy may be, and have been, organized in any of several different ways. The size and character of the group and the exact method of organization adopted in any given instance depends largely upon the locality concerned, the men that are available and the particular purpose for which the group is formed. The larger the medical center and the greater the number of men engaged in special practice, the easier it is, as a rule, to form a competent and satisfactorily inclusive organic group. Through able and attractive leadership, however, some of the best groups now at work, for example and notably that of the Mayo Clinic, have been established in small places and have drawn to them large numbers of patients for study and for treatment. The paradigm of group I have in mind is that organized for the conduct of general diagnostic surveys of the patients as a whole and for the prescription and execution of comprehensive

therapeutic regimens based upon them. Groups formed for other and more limited purposes doubtless have their place, but I shall not discuss them here.

The steps that have to be taken in the making of a general diagnostic survey, I have described elsewhere. (Briefly in an article entitled: *The General Diagnostic Survey made by the Internist Co-operating with Groups of Medical and Surgical Specialists,* New York Medical Journal, N. Y. 1918, cviii, 489; 538, 577, and more fully in the article entitled *The Rationale of Diagnosis* in the Oxford Loose Leaf Medicine, Vol. 1, 1919.) They include: (1) the realization of the existence of a diagnostic problem; (2) the collection of data more clearly to define and to locate that problem; (3) the consideration of the facts thus collected in order that, through the use of the scientific imagination, solutions of the problem may suggest themselves to the mind; (4) the elaboration by reasoning of all the implications of each suggestion of solution; (5) the testing, for their validity, of the various suggestions, and the making, when necessary for refutation or corroboration, of further observations and experiments; and finally, (6) the arrival at diagnostic conclusions. These steps involve (1) the taking of a careful anamnesis; (2) the recording of the results of a general physical examination; (3) the arranging, according to the indications of the anamnesis and the general physical examination, (a) certain laboratory tests, (b) certain X-ray examinations and (c) certain examinations to be made by specialists in particular domains; (4) summarizing of all these findings for the integrator; (5) the work of integration and the testing of its results; and (6) the recording of the several conclusions reached in the order of their importance.

In some organizations, the group concerned in these manifold performances is spatially compact (under one roof) and its members are legally all closely related to one another, the relationship being that of partners, of employers and employees, or of constituents of an incorporated body. In other organizations, we see a system of overlapping groups, a leader arranging for sympathetic and cordial co-operation with a whole series of general and special workers in the city in which he works, requesting examinations in a given special domain sometimes by one man sometimes by another and standing in no closer spatial or legal relationship to each of these special workers than that of one consultant to another. And between the spatially compact, closely knit, and exclusive types of group on the one hand and the spatially separated, loosely interwoven, and more inclusive or overlapping types, on the other, various intermediate forms of group-organization have, in many places, been found expedient. The precise form of team-work adopted is less important than the function that is performed. What is essential is that the combined activities of the group members, no matter what the form of the group, shall adequately fulfil the group purposes, namely, the making, through analysis and synthesis, of an accurate, comprehensive, properly proportioned, diagnostic survey, conveniently, amicably, quickly and economically, and the planning and, when desired, the executing of an appropriate therapeutic regimen that will secure for the patient all the benefit possible in the present state of medical knowledge and technique.

OBJECTIONS THAT HAVE BEEN MADE TO GROUP-WORK.

Notwithstanding the objections to group-work that have been expressed by its opponents, those who have engaged in diagnosis and therapy in well-organized groups are so convinced of the advantage of this method of practice that they would be loath to go back to the earlier methods of isolated individual activity. As a matter of fact, purely individual medicine is no longer practicable and no one at present strictly adheres to it. Even those who oppose the systematic organization of groups make use of the group idea to some extent. Thus, they may have their laboratory tests made for them by others; or they may send their patients to roentgenologists for X-ray examinations. They recognize, too, the advantage of, at least, an occasional consultation with one or more of the specialists who limit their activities to particular domains. The most independent and resourceful of general practitioners can no longer satisfactorily carry out by himself all the tests that may be necessary in the study of an obscure case. Group workers believe that group organization overcomes many of the difficulties and avoids many of the dangers that confront the individual workers in both general and special practice. But it must be granted that there are special impediments and perils incident to the work of groups. Of these, and of the several objections that have been offered, group workers themselves are cognizant, and to a consideration of some of them we may now conveniently turn.

Superfluousness: There are some ultra-conservative physicians who express disapproval of group-work on the ground of its entire superfluousness, maintaining that the older method of individual practice, with the aid of an occasional consultation, fully suffices for the study and care of their patients. They are, they say, "sufficient unto themselves," and they "do not believe in one doctor having other doctors make his diagnoses for him". Such objectors may go so far as to refuse help from any associate, feeling it their duty not only to take the patient's history, and to make the general physical examination but also to make every laboratory test indicated and every examination in special domains required with their own hands and eyes. Faithfully attached to the rites and opinions that have received the sanction of their forerunners, they are unwilling to risk the perils that may attend group-work, which they consider a rash innovation.

Not many, perhaps, now adhere to this extreme and obviously untenable position, but there are undoubtedly many physicians who sincerely believe that group-work and general diagnostic surveys of the kind I have referred to are largely superfluous, though they admit that, in certain obscure and especially difficult cases, they may be legitimate or even desirable. The great bulk of private practice, they consider, can, and should, still be carried on by the method of individual practice. The supporters of group practice will do well to bear in mind these contentions of the more liberal conservatives. For it would only impede the progress of a good form of clinical work to urge its application where it is either unnecessary or impracticable. It should be freely granted that, in many localities, especially in rural districts, it is at present not feasible; that, in a host of minor ailments, it can be dispensed with; and that, in some contingencies, like those of primary surgical urgency, it must be postponed, or temporarily, rigidly restricted.

Experience in group practice indicates, however, that its proper field is a much larger one than most of the objectors to it recognize. Very often what appears on the surface to be a minor ailment, or an insignificant symptom, turns out, on thorough study, to be the premonitory signal that a serious condition impends, one that, left unrecognized, may soon advance to an unmanageable stage. Very frequently, too, the symptoms of which a patient complains are far less important than signs that are discoverable only by the use of the more inclusive analytical methods of a general diagnostic survey. A nasal catarrh may be very troublesome to a patient who unwittingly conceals a beginning carcinoma of the prostate. An autodiagnostic person may request the removal of his tonsils when his blood pressure is 270 and his phthalein output is 10. A neurasthenic may clamor for and secure the performance of a series of major operations when what he needs is general upbuilding and psychotherapy. General diagnostic surveys are often most required when the need for them is least felt. They protect both patient and practitioner and luckily the more intelligent of both groups are becoming ever more aware of their usefulness.

The increasing prevalence of ideas of prophylaxis is now giving an impetus to group practice and to the occasional making of general diagnostic surveys even of persons who are apparently in good health, as a salutary method of insurance. Many men of large responsibilities in business and in the professions have, of late years, adopted the practice of resorting, at more or less regular intervals, to diagnostic groups for a general survey in the expectation of thus increasing and prolonging their health and efficiency. Such men are becoming ever more willing to go to the inconvenience and expense of such examinations; they are eager and grateful for advice that will ward off disease or help them to keep fit. Life insurance examinations and membership in Life Extension Institutes have gone far toward educating men of action to the importance of periodic overhaulings and of a hygienically regulated life. Both the laity and the medical profession have been impressed, too, by the revelations made by the examiners of recruits during the recent war. Large numbers of supposedly healthy young men, examined in a single evening by the Medical Boards (made up of general practitioners and specialists) were found to suffer from corrigible maladies or defects, discoveries that were greatly to the advantage of those wise enough to profit by them. It would seem, then, that for reasons of prophylaxis alone the group method of general diagnosis and therapy is likely to grow in favor. And when we consider all the advantages derivable from group practice as applied both to recognized illness and to prevention, the argument of superfluousness seems to lose much of its weight.

Cost—It is believed by some patients and by some physicians that the cost of group work is

prohibitive. The expenditure of time, labor and money for the general diagnostic and therapeutic work that group practice implies, is, they think, out of proportion to the benefits derivable, or is such, they assert, as to make the activities of a group accessible to none but the well-to-do. If these objections were valid and the hindrances irremovable, group practice would be doomed entirely, or seriously restricted in applicability. That they are not valid is demonstrated by the rapid increase of appreciation of the benefits of group practice by members of all classes, the wealthy, the moderately well-off, and the poor, and the growing numbers from all three classes that are applying to groups for study and for treatment.

The *time* required for a general diagnostic survey by a well-organized group is not so long as many seem to think. In most cases, a period of two or three days will suffice; in some instances, a thorough study may require four or five days; in exceptional instances, of very obscure disease, or of metabolic disorders requiring tolerance-testing, a longer period may be necessary. The patients who expect a complete diagnosis of a difficult case in a single day, or between trains, or in an hour intervening between shopping expeditions in a large city, or between visits to an exhibition, are growing fewer. Even these will usually find it possible to adjust themselves to the required conditions when the time-exigency of accurate diagnosis is clearly explained to them. Persons living in the place in which the group is at work can easily make appointments that will interfere but little with their vocations, and those coming from a distance can give themselves over wholly to concentrated study if they desire to minimize the time allowance. And when it is borne in mind that a complete survey may, within a few days, satisfactorily solve a diagnostic problem and permit of the immediate institution of the most appropriate therapeutic regimen for a patient that, by piecemeal diagnosis might be compelled to flounder for weeks, months, or even years in uncertainty, or in error, of diagnosis and fail through this longer period to receive the best treatment, it will be seen that the expenditure of time required for the group work is not extravagant.

Granting that the time spent is not unreasonable, there are some who feel that much unnecessary inconvenience is suffered by patients who resort to groups for diagnosis and that many tests are made by the physicians of the group that are needless, involving a waste of energy on the part of both patient and group members. This misconception seems to depend mainly upon a lack of understanding on the part of the objectors of the nature and significance of the general diagnostic survey. Doubtless many of the tests made may yield normal results, but often these evidences of normality of certain structures and functions are of the greatest help in differential diagnosis. The supervisor of the survey should, of course, possess common sense (as well as medical knowledge and experience) and make good use of it when he decides upon the tests to be made in a given case. In one case relatively few, in another relatively many, may be required. He should call for no unnecessary expansion of the study but he should not shrink from requesting reports that may be of real importance in the total consideration of the case. The most careful and conscientious supervisor will occasionally make mistakes in the ordering of tests, sometimes of omission, sometimes of commission, but the greater his ability, knowledge and skill, the fewer of these there should be. For one of the supervisor's aims will be to restrict, as far as is compatible with safety, the expenditure of energy during the study both by the patient and by the staff of examiners.

As to the expenditure of *money* required for group study and group treatment, it will be found, I believe, that the group method is, in reality, economical. Though the immediate expense may be considerable, the ultimate saving more than compensates for it. Consider, for example, how a patient with arthritis, insufficiently studied at first, may undergo expensive forms of treatment for weeks, months or years, becoming ever more crippled, whereas a thorough general diagnostic study resulting in the discovery and removal of the focus, or foci, of infection responsible for the arthritis by group study and treatment might have given him prompt relief and have prevented the chronic invalidism! Think, too, of the long undernourished neurasthenics you have known of who have spent large sums over a period of years for a series of surgical operations vaguely undertaken, without sufficient diagnostic consideration, in the hope of relief and who might, had they undergone a complete diagnostic survey by a competent group and then submitted themselves to appropriate therapy, have been restored in the course of a few weeks to comparatively good health! Instances like these, and many others that occur at once to

the minds of those familiar with the results of group practice will go far toward nullifying arguments against it based upon the financial expenditure necessitated. Moreover, medical groups, like individual practitioners, make it a point, or should do so, to see to it that patients do not pay fees that involve any real hardship or inconvenience. By various means (blanket-fee arrangements, etc.) the cost of group study and treatment can be brought within the means of all who require it.

Inhumanity: The charge of inhumanity, of heartlessness, and of lack of sympathetic feeling with the patient, has sometimes been made against group practice. One hears the activities of a medical group spoken of as the "department-store type" of medical practice; or as a "mere machine" from the "brutality" of which patients shrink. Medical aid, to be effective, these objectors say, must depend largely upon a close personal relationship and they assume that all personal touch with patients is lost when practitioners co-operate in groups. The results of group-work are, however, a sufficient denial of the validity of such objections. Group-work to be successful must provide for the personal relationships that are essential. And as a matter of fact it does so, when properly organized and conducted. In therapy, especially, the patient is usually under the close supervision of some single member of the group, and the patient not only benefits from the close personal relationship with this member but also enjoys the confidence that the group as a whole has inspired in the accuracy and completeness of his study and in the comprehensive regimen planned for him. Recognition of the possible evils of mechanism and provision against them are two of the functions of the organizers of groups.

Cliquism: An important objection to group practice, and one not to be blinked, is the danger of cliquism. There is nothing, perhaps, more conducive to bad feeling in the profession than the belief that coteries of physicians have set themselves up as superior and exclusive associations that try to monopolize practice. Even when groups are composed of competent, sincere, well-bred, and fair dealing members, they may excite the envy or the resentment of other groups or of individual practitioners. Many consultants decline membership in groups fearing that group membership may lessen the wide and cordial relations that they have established.

The method of organization by overlapping groups, already referred to, the cultivation of modesty, sincerity and absolute fairness to physicians outside the group by all the members of the group, the willingness, on request, to adopt as a part of the group study the reports of any competent specialist who is not directly associated with the group, and unselfishness in the distribution of the patients for therapy after a general study has been made, will go far towards preventing and overcoming antagonism. New conditions require new adaptations of ethical codes; but good will on the part of each member of a group to the profession as a whole and honest intention and effort in serving the best interests of patients should facilitate the necessary adjustments. In any case, the evils of cliquism must be avoided and medical groups should be ever on the alert to discountenance them.

Commercialism: Finally, the criticism that diagnostic and therapeutic groups tend to commercialize medicine, to turn it from a profession into a business, merits comment. It has been intimated that the very organization that group medicine demands—its associations, partnerships or incorporations, its staff of secretaries, stenographers and bookkeepers, its efficiency mechanisms, its systematized financial arrangements — imports into medicine a commercial spirit that was unknown to individual practice. Even the good faith of the group has sometimes been doubted, the charge being made that the well-to-do patient was being exploited—sent on a merry-go-round of numerous and superfluous examinations merely in order that the fees to be collected might be multiplied! Or, again, it has been alleged that the public is sometimes deceived as to the constitution of a group; led to expect the co-operative activity of experts, the patients, in reality, have found themselves in the hands of mediocre examiners and of pseudo-experts in specialistic treatment! The relationship of the younger men and of the men of growing reputation to the older and better known members of a group, too, has been questioned, with the oblique hint that the former were often unfairly made use of to advance the private interests of the latter. That abuses of group practice sometimes exist, medical men being human, and human nature being what it is, I have no doubt. But that the zeal for group methods of work has, in general, been instigated by sordid motives of interest can scarcely be believed by anyone who is at all familiar

with the conditions that obtain in modern medicine or with the personnel of the groups now at work.

The medical profession should not despise the methods that have been devised by good business men. It is no longer "good business" in the commercial world to be dishonest, to deceive the customer, to displease him or to give to him less than is received from him. The "business methods" of physicians have been notoriously deplorable. The lack of system in their work, the loose organization of their offices, the irresponsibility of their appointments, the primitiveness of their accounting (at least before the advent of the income tax), and the lamblike innocency in the disposition of their savings, have been an opprobrium to the profession. If the exigencies of group practice compel the adoption of better "business" methods than those that have hitherto prevailed among medical practitioners, it will be matter for congratulation rather than for criticism.

Moreover, in economic life, evils are prone, in an astonishing way, to defeat the objects of their perpetrators. Any temporary success derived from over-shrewdness, craftiness, extortion, or unfairness is likely to be followed by failure, loss of reputation and disgrace. For this reason alone, and wholly aside from the high ethical standards that guide the conduct of most medical men, there need, I think, be little fear that group medicine will foster meanness or baseness in its adherents. On the contrary, it would seen probable that, through the imagination and the intellect of group-organizers, the practice of medicine will be raised to a higher and even more honorable level.

CONCLUSION.

The results of my analysis of group diagnosis and group therapy are seen then to be, on the whole, favorable to these methods. Group medicine may be regarded as the latest phase of progress in practical clinical work. It is an outcome, as I have shown, of the growth of science, of the principle of division of labor, of the rise of specialism and of certain other factors. The general diagnostic survey, comprehensively, accurately, quickly, proportionally and economically conducted can be of great advantage to persons submitting to it, and therapy, too, can be carried out better through the co-ordinated activities of a group than by isolated practitioners. The arguments against group practice on the grounds of superfluousness, cost, inhumanity, cliquism, and commercialism are seen, on close scrutiny, to lose much of their cogency though they indicate difficulties and dangers against which group workers should be on guard. Now, as always, the profession and the public should welcome modifications of medical procedure that make practice more rational, precise and efficient. Medical practice even at its best can not wholly take away the appetite of people for charlatanism and for superstition. We smile, sometimes, at the age when the Delphic oracle was consulted, but let us not forget that even today the Ouija board is much in evidence and that a distinguished physicist relies upon spirit messages from his deceased son. We look back with amazement to the time of the disinterment of the remains of St. Stephen when an "odor like that of Paradise was smelt, which instantly cured the various diseases of seventy-three of the assistants", but we pass over lightly the "spiritual healer" of our own day who promises the complete cure of all diseases, even cancer, to those of sufficient faith! But as medical science grows and physicians become more skilful and better organized the people will become ever less susceptible to the delusions of obscurantism. And among the agencies contributing to this desirable end, group medicine may also find a place.

THE PROTEIN OF FOODSTUFFS AS A FACTOR IN THE CAUSE OF HEADACHE.

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Headache has been called the most common of all symptoms and yet there is very little exact knowledge concerning its etiology. A well-known author attempted to make a graphic representation of the cause of some 3,000 cases of headache, in which those due to eye strain and intrinsic diseases of the eye, besides temporary headaches due to fatigue, bad air, hunger, constipation and indigestion, alcohol, the onset of infectious diseases and menstruation, were omitted because the cases were too numerous, or the causes too vaguely defined, to be represented graphically. In studying the chart one cannot help but remark upon the large proportion of headaches of which the etiology is practically undetermined. For instance, one would hardly call psychoneurosis a sufficient diagnosis, yet this was the cause given in over 1,000 cases. In over 600 cases the cause is frankly stated as unknown, in 89 the headache is called indurative, and in 89 the diagnosis is migraine. The terms in-

durative and migraine merely describe the kind of headache, and have no reference to its etiology. In less than 1,000 cases was a real diagnosis made. Of these 600 were due to nephritis, 172 to meningitis, 157 to sinusitis, 46 to brain tumor and 16 to syphilitic periostitis. The pathological change in nephritis can only indirectly cause headache, and the real cause must be toxic, the toxemia arising from the inadequate function of the kidney. It is also quite possible, as I have found in headache of the migraine and indurative type, the nephritis is not the cause, but a coincident affection.

Only a small proportion of headaches therefore are due to a real pathological condition, such as brain tumor, meningitis, or sinusitis and even in sinusitis it is a question whether the headache is not due as often to the toxemia arising from the retained secretion, as it is due to the pressure.

Therefore it seems to me most reasonable that we should look for the cause of the vast majority of headaches in something that produces a disturbance of function which does not lead necessarily to pathological changes. Toxins have this property and one of the most common examples of headache produced by a toxin, is the headache during the onset of infectious disease. As we usually attribute toxemia to infection, it is quite natural in cases where there is no acute infection that we should look for some chronic focus of infection, as for instance in the nose, tonsil, gall bladder or appendix. Focal infection may be responsible for some headaches, but it has been my experience unfortunately to be called upon to treat headaches which still persisted in spite of the fact that all known sources of focal infection had been removed.

Headaches according to Dr. Coombe of Lausanc are often due to what he calls autointoxication, the source of the toxemia being the toxins arising from bacterial fermentation in the intestines. He accomplishes most excellent results in the cure of headache by changing the character of the bacterial life in the intestine with drugs, and especially by diet. The good results he obtains, I believe, are not due entirely to the change of the bacterial flora in the intestine, but to the fact that he greatly limits the protein intake of the patient.

We usually think of toxemia as a condition caused by living bacteria. These bacteria however contain toxins, which are the protein or nitrogenous elements, whether they are living or dead. These proteins or dead bacteria can be extracted and will cause poisonous manifestations if introduced into the body. The proteins of bacteria however are not the only proteins that can produce poisonous symptoms. Any animal or vegetable protein may act as a toxin under certain conditions, as for example, when they are introduced parenterally into the body of an animal whose protein metabolism has been damaged and rendered inadequate for that particular protein by previous sensitization. Then they will produce toxic manifestations and even death.

The lesions and manifestations of infectious disease are really produced by chemical processes. The pathogenic bacteria assimilate the nutritious elements of the fluids of the body, and build them up into its own tissue proteins, and when the bacteria are spontaneously dissolved or disrupted by the ferments of its host, the poisonous proteins are released and produce the toxemia and manifestations of disease. The manifestations of infectious disease are therefore due to the reaction between the foreign poisonous proteins of the body of the bacteria, and the ferments which are produced by the tissue cells to combat these proteins. The pathogenicity of the bacteria depends upon the ability of the host to assimilate and metabolize the proteins of the bacteria and if this is accomplished without abnormal reactions the host is said to be immune. What is true of the protein of bacteria is also true of any protein except that in the case of the protein of foodstuffs enterally introduced, if the protein metabolism is adequate, the reactions are not abnormal, and the manifestations are not noticeable. If, however, the protein mechanism of metabolism is not adequate for a particular protein we do have reactions that are abnormal and these reactions are the manifestations of disease. This is the true explanation of idiosyncrasies. That certain individuals have poisonous manifestations after eating certain foodstuffs such as fish, strawberry, egg, buckwheat, is a matter of common knowledge. The usual explanation of idiosynerasies, that the individual has been previously sensitized to the particular protein, is not, in my estimation, a sufficient explanation, for there are many examples of infants who are extremely sensitive to egg and others to cow's milk who could not have been previously sensitized, and it is a fact that, as Darwin noted many years ago, certain species of animals are immune to certain foods which are poisonous to other animals. He notes that while brown pigs could eat a certain variety of buckwheat with impunity, white pigs, or

brown pigs with white spots had severe poisonous symptoms after eating the same buckwheat. It is well known that artificial scurvy can be produced in guinea pigs and rabbits by feeding them with either cow's milk or woman's milk, which act as poisonous proteins to them. *The real explanation of the question of the poisonous or non-poisonous effects of certain proteins lies in the adequacy or inadequacy of the protein metabolism for that particular protein.*

Protein metabolism can be divided into three parts, the alimentary digestion, the intermediate metabolism, and the elimination of waste products. We know a good deal about the alimentary digestion, and also about the end products of metabolism, but the vast field of the intermediate metabolism, in which every tissue cell in the body has a part, and in which we have to deal with the protein digesting tissue ferments we know little or nothing. Every tissue cell is a chemical laboratory. It must break down the protein food that is brought to it into simpler compounds and build up from these compounds the more complex protein constituents of their own tissue cells. To do this the tissue cells must prepare suitable ferments. If they are able to furnish suitable ferments in proper quantities for every protein they encounter, all is well and no abnormal reactions take place. It often happens however that the protein metabolism is not adequate and then we have abnormal reactions. Functional reactions often lead to congestion and inflammation followed by breaking down of tissue and its replacement by scar tissue. Then we have, just as in infectious disease, organic change and chronic disease, with its underlying pathological change in tissue.

Now the point I wish to make is that the protein of foodstuffs is able to produce symptoms and manifestations in individuals in whom the protein mechanism is inadequate for those particular proteins. The protein poison manifestations may be most trivial or they may be severe. To enumerate them would be but to enumerate the symptoms of disease, but in order to give you an idea of them I will enumerate some, beginning with the most common of all symptoms which I have chosen for the subject of this paper: headache, dizziness, vertigo, pain in muscle joints, nerves, numbness, tingling, twitching, fibrulation of muscles, oedema, congestion of the mucus membranes, conjunctivitis, congestion of the nasal mucus membrane, sore throat, bronchitis, asthma, dryness of skin, early loss or greyness of hair, trophic changes in skin and nails, leucoderma, pruritis, eczema, and various other diseases of the skin, nausea, vomiting, especially cyclic vomiting and other manifestations of acidosis, diarrhea, mucus colitis, various disturbances due to over secretion of endocrine organs as, for example, high blood pressure and exophthalmic goitre, polyuria, burning and smarting of urine due to high acidity, gout, lithiasis, migraine.

For some reason, probably by long continued excess of protein intake, especially animal protein, beyond the amount necessary to maintain a nitrogenous balance and yet keep the body in good physical condition, the human body has overtaxed and injured its apparatus of metabolism, so that it cannot metabolize the protein without undue reaction from the poisonous elements contained in it.

I call the symptoms which are produced when undue reactions are caused by the protein of food "protein poison manifestations". These manifestations may take place in any tissue or organ in the body, and the symptoms produced do not depend upon the variety of the protein, but upon the tissue in which the manifestation takes place. When manifestations take place in several tissues of the body at the same time we call the protein manifestations "syndromes".

There are a large number of diseases and symptoms which evidently are not due to infection. The origin of these diseases has been considered unknown or uncertain, and various theories have been advanced to account for their causation. I believe a large majority of these affections are due to the poison element in the protein of foodstuffs.

While I believe the protein poison manifestations are caused mainly by the protein ingested in the food, or in other words the exogenous protein, it must be admitted that symptoms may also arise from faulty endogenous metabolism, that is, the metabolism of the protein of the tissue cells which must be broken down into simpler compounds and eliminated. Symptoms may also arise from the absorption of protein toxins of bacteria in the intestinal canal. I believe, however, that symptoms usually attributed to autointoxication really arise from the imperfect metabolism of the ingested protein.

The diseases which I consider protein poison manifestations include those which were classified by the old French school represented by Trousson,

Bouchard and Deilefoy, as caused by a lithemic diathesis. They noted the close relationship of these diseases and also the inherited tendency. With the discovery of infection, however, the term diathesis fell into disrepute and no other cause for disease than infection was entertained. Protein is also the cause of the exudative diathesis of the modern German school.

Heredity is a most important factor in protein poison manifestations, and the inability to metabolize properly is much more noticeable in some families than in others. This may be explained if it is admitted that the chemical characteristics, for instance, the arrangement of the protein molecules in the tissue cells, upon which the metabolism of protein depends, are inherited, just as physical characteristics are inherited.

While it is true that a certain amount of protein is necessary to replace tissue waste, it must be remembered that all protein is potential poison, and, unless the resistance or immunity to a particular protein is present, harm will result from its ingestion. As far as foreign proteins are concerned, the ability to metabolize them properly, and immunity are the same. As far as idiosyncrasies to certain proteins are concerned, it may be assumed for all practical purposes that those who have idiosyncrasies to certain proteins, are in a measure, susceptible to several proteins, or in other words, those who have idiosyncrasies are protein poison subjects.

Although some people have idiosyncrasies to certain vegetable proteins, and especially to the protein of fruits, it may be taken as a general law that the human race has developed considerable immunity to vegetable protein. The immunity to animal protein is much less general. In some families the lessened resistance is very marked and instead of developing from generation to generation an acquired immunity, they transmit a lowered resistance. This fact is easily proved by studying the family histories of protein poison subjects.

Protein poison is soluble and easily extracted, especially by heat. This fact is of great practical importance, though often overlooked, for meat juices, soups, and gravies contain the protein poison of the meat. In my experience I have found soups and meat extracts just as deleterious to a protein poison subject as the meat itself. The protein poison of fruits is also found in fruit-juices and jellies, as those who have idiosyncrasies to proteins contained in strawberries and other fruits well know.

Protein poison may produce manifestations in any tissue or organ of the body, and may simulate any symptoms that are produced by infection; indeed, many symptoms attributed to infection, are really protein poison manifestations. It may cause inflammation, pain, fever, and oedema. The symptoms vary according to the tissue involved. There may be manifestations in the skin, in the mucus membrane of the digestive or respiratory tract, in the nervous system, or in any organ of the body, including the ductless glands and organs of special sense.

Just as in infection, the protein poison manifestations may be acute or chronic. The acute manifestations are often accompanied by acidosis. There may not always be acetone in the urine, but titration of the urine will always show a high degree of acidity. Polyuria is often present. The blood is apt to show eosinophilia especially in affections of the skin and bronchial mucus membrane. The type of fever may simulate that of typhoid or tuberculosis. Acute protein manifestations accompained by rash and fever are very apt to be mistaken for exanthemata. Some cases of acidosis simulate meningitis.

Acute protein manifestations are identical with what Professor Ferdnand Widal of the University of Paris calls protein shock. He has proved conclusively in cases of protein shock, of which he gives as examples, asthma, urticaria and certain alimentary disturbances which he calls alimentary urticaria, there is preceding the protein manifestations a definite change especially in the blood, a "crise hemo classique". These changes consist in variations in coagubility, leucopaenia, diminution of blood platelets and sharp variations in the index of refraction of blood serum. There is also arterial hypotension. These blood changes precede the protein manifestations and disappear when the manifestations occur. He also brings out the point that protein manifestations though similar to anaphylactic manifestations are not identical and may take place without previous sensitization.

In chronic manifestations, as a result of the continued action of protein poison, organic changes in the tissues are taking place, and there is degeneration of tissue with the resulting scar formation. Although a person may become immune to the acute manifestations, or never be subject to them, still there is the danger that damage is being done

to a blood vessel, the kidney, or the liver, producing arteriosclerosis, nephritis, or cirrhosis, or that degeneration and sclerosis are taking place in some other tissues in the body.

There is a marked tendency in protein poison subjects to abnormal acidity. If the urine of these patients is titrated it will be found that instead of being about 30, which is normal, it will be anywhere from 50 to 100. Also the saliva will often be found to be acid instead of alkaline, which it normally should be. These patients are frequent subjects of hyperchlorhydria, acidosis and often are subject to lithiasis.

When I speak of acidosis I do not necessarily mean the presence of acetone bodies to excess in the urine but I mean a relative acidosis or high alkaline tolerance. I quote in this connection A. A. Sellards: "the normal alkalinity of the blood (and I believe other fluids of the body), depends on the existence in it of certain fixed bases, chiefly carbonates and phosphates; these are the so-called 'buffer' salts. They combine with and partially neutralize acids; without their presence, acid by-products of metabolism, for example, CO_2 and lactic acid, would render the reaction of the blood so acid as to be physiologically intolerable. In a normal person with a sufficiency of these fixed bases in his blood and tissues, the intake of any appreciable quantity of alkali, for example, sodium bicarbonate, is followed by its immediate excretion in the urine. If, however, the fixed bases are deficient, additional alkali taken, instead of being excreted, is stored in the tissues and the urine remains acid."

Sellards has shown that 5 grams (about 75 grains) of sodium bicarbonate given by the mouth is practically the upper limit of normal tolerance. This amount is almost invariably sufficient to change the reaction of the urine of a normal person from acid to alkaline. In cases of acidosis very much larger quantities must be given before the reaction of the urine changes.

The formula adopted for the administration of the alkali was the following:

	gm. or c.c.
Magnesium carbonate	
Calcium lactate	33
Potassium citrate	2
Sodium bicarbonate	4
Chloroform water to make	30.

This is given in increasing doses until the urine becomes alkaline. In some cases as much as ten times the above amount will be required daily to change the reaction of the urine.

One of the characteristics, especially of the acute protein poison manifestations, is the multiplicity of the manifestations. One patient may have many different manifestations, such as migraine, hyperacidity, nasal turgescence, and be subject to attacks of purpura. Another patient may have periodic diarrhea, bronchial asthma, and suffer from various myalgias. Another may have eczema, chronic bronchitis and gout. Another may be subject to periodic sore throats, have frequent headaches, and be subject to vertigo and ringing in the ears.

Variability is also characteristic of protein poison manifestations. Instead of several manifestations taking place at the same time, as in syndromes, a patient will suffer for years with intestinal manifestations; these will cease, and a respiratory manifestation such as bronchial asthma, takes its place. It is not infrequent to see urticaria alternate with bronchial asthma. A patient may suffer for years with migraine and this will cease with the beginning of a colitis or a bronchial asthma.

Periodicity of attacks is another characteristic of protein manifestations. Attacks often appear in cycles with intervals of well being. This is especially noted in children who have periodic sore throats or attacks of bronchitis, or have periodic digestive disturbances with vomiting or diarrhea. In children these attacks are often accompanied with skin manifestations such as dermatographia. The periodicity of migraine, gout, bronchial asthma, and purpura hemorrhagica, is well known.

The ductless glands play an important role in metabolism and it is not strange that they should suffer from protein poison. In their endeavor to meet the demands of excessive protein intake, one or more ductless glands is overtaxed, and the body in turn may suffer from the over-secretion of the ductless gland. Exophthalmic goitre is one example of the over-secretion of the thyroid gland, and high blood pressure with its consequent arteriosclerosis is an example of the overtaxing of the suprarenal glands.

The primary cause of disease is often overshadowed by the secondary cause. Infection is not the primary cause of sinus trouble, which is so often found in protein poison subjects. The primary cause is the turgescence of the nasal mucus membrane which impairs the normal drainage from the sinuses. Acute attacks of nasal turgescence with coryza-like symptoms can be easily produced

in a susceptible subject by eating too much animal protein.

There is also a direct relation between protein poisoning and infection. By the continued ingestion of protein, especially animal protein, in persons whose metabolism is deficient, the alkali reserve of the blood and tissue fluids is lowered. This tends to a lowered resistance to infection. Protein poison subjects are subject to acne, pimples, and boils, showing a lowered resistance to infection in the skin. These patients also are frequent sufferers of tonsillitis, cankers, and pyorrhea. If the family and personal histories of patients having ulcers of the digestive tract be studied, they will be found to be protein poison subjects.

In making a diagnosis the personal and family history is of the utmost importance. The occurrence of protein manifestations such as gout, migraine, purpura, eczema, lithiasis, bronchial asthma, goitre, mucus colitis, sinus trouble, etc., etc., in the patient or his family should be noted. Often a patient will be found to be of a gouty family and have a history of many protein manifestations.

There are certain stigmata to be looked for, such as trophic changes in the nails shown by the longitudinal striated lines, early greyness or loss of hair, Herbeden's nodes, etc. The occurrence of many warts and moles, naevi, and telangectases is suggestive.

The differential diagnosis usually lies between protein poison and infection. The possibility of focal infection should never be overlooked, yet as protein poisoning will simulate all the symptoms of focal infection, it is well to take that into consideration before extensive or repeated operations. I have seen so many cases where symptoms have persisted after repeated operations, (tonsils, gallbladder, appendix and the extraction of all the teeth), to locate focal infection, but finally disappear under restricted protein diet, that unless the infection is evident and operation clearly indicated I would give the patient the benefit of the more conservative treatment.

The prognosis of the patient depends upon the age of the patient and the duration of the symptoms. The best results are accomplished when treatment is commenced before any organic change has taken place in the tissues. The best results are achieved in children and young adults, though even in elderly patients the improvement is often marked. In children the prevention of protein poison manifestations is much more important than the treatment, for the acute symptoms are usually self-limited and of short duration, yet much harm can be done by improper diet if the cause of the symptoms is not understood.

In considering treatment it is well to remember that the researches of Chittenden and others prove conclusively, that the human body can be in the best of health and strength and keep a nitrogenous balance, on about one-half the protein intake that was formerly thought the minimum. The human race, especially in modern times, is habitually consuming two and three times the amount of protein necessary to repair tissue waste. Many experiments have shown that animal protein is entirely unnecessary and that the body can subsist and maintain its health and strength upon a diet in which all the protein is from the vegetable kingdom only.

In treating protein poison manifestations it is, in my opinion, best not to lose time by attempting to locate particular proteins, for I believe that those who are susceptible to particular proteins are also susceptible, in a measure, to all animal protein. It is best then to restrict or withdraw, according to the necessities of the case, all animal protein at once. It may be necessary to withdraw all fruit at first. The withdrawal of fruit is indicated as a result of the clinical experience that many of the exact manifestations of protein poisoning are also produced by fruits.

It is interesting to note that protein poison subjects often have idiosyncrasies to drugs as well as foodstuffs. In restricting the diet as to meat, eggs, and fruit, it must be remembered that the protein poison is soluble and easily extracted and that meat soups and gravies, and also fruit juices and jellies, contain the poison. As tea, coffee, and cocoa contain protein poisons and will produce manifestations, they also must be restricted. The amount of cow's milk taken must be limited. The fact that rabbits will die in twenty days if fed on cow's milk, although they are at the same time given their normal vegetable food, should convince the most skeptical that cow's milk contains a poison. Children must either have or acquire an immunity to cow's milk or it will produce manifestations. I believe that most of the digestive troubles of infants arise from the protein of cow's milk. It is certainly remarkable how the tendency to convulsions and digestive disturbances in children disappears when the cow's milk is restricted and

gruels substituted. Although the diet is the principal factor in treatment, eliminative treatment and a certain amount of alkali are indicated. The index of the acidity of the urine should not be allowed to remain above the normal.

The reason I have chosen headache as an example among the various manifestations of protein poison is because, in the vast majority of cases, it is purely a functional disturbance and the removal of the cause, as I will show in my cases, does cure the headache.

Although the vaccination with various proteins is an interesting procedure and there is often a marked reaction to some particular protein, where the patient has a marked idiosyncracy to that protein, it is of no great practical value in treating protein poison manifestations such as headache. In the great majority of cases patients have acquired an immunity to an active protein manifestation like a skin reaction, by the long continued ingestion of proteins. I have found it best in treating a headache which I suspect may be due to protein, to put a patient on a test diet. This test diet has been determined after many years of experience upon what I call protein poison subjects, that is, patients who are especially sensitive to protein. While it is undoubtedly true that one protein may be the cause of headache in one patient and another protein the cause in another patient I have found that the most satisfactory and quickest results are accomplished by putting the patient on a diet free from any of those proteins which I have found will cause abnormal manifestations in protein poison subjects. It is by no means necessary that the protein should cause headache in the subject experimented upon. If it causes congestion of the nose or throat or twitching of muscles or pruritis, urticaria, insomnia or one of a hundred other symptoms, I know it may be in my prospective patient a cause of headache.

The articles of food which I have found most liable to cause headache as well as other protein manifestations are, in order of their importance, meat extractives, fruit and fruit extractives, eggs, meat, coffee, tea, chocolate, cocoa, and certain vegetables such as tomato, mushroom, rhubarb, and cucumber. Although these proteins I have found to be the most frequent causes of headache, it must be remembered that any protein may be the cause. In one very exceptional case I found the protein of oats and also that of white potato caused headache. It is most important to remember that the protein extracts such as meat soups and fruit juices are even more potent than meat or fruit. This shows that the protein poison is soluble. I believe that the usual hospital diet of meat soup, eggs and fruit juice is bad not only in cases of protein poison manifestations, but also in cases of infectious disease for it has a tendency to reduce the normal alkaline reserve of the body which is needed to combat infection.

I will omit the routine examination and treatment in each case. Patients are questioned as to their symptoms and their own history and family for evidences of protein poison manifestations. The urine is examined for evidences of nephritis or diabetes and the degree of acidity is determined. The blood is examined and blood pressure taken. Evidences of focal infection are looked for. They are questioned as to former treatment and present diet.

They are given a diet list, a mild saline one hour before breakfast and XXX gr. of Coombe powder after each meal.

Usually no other treatment is given except when especially indicated.

Case 1. Mrs. K., aged 48, was a case of typical migraine. She had had periodic headaches since childhood, but recently they had become so frequent and severe that she thought she had a growth in her head. The headaches were usually of two or three days duration, seldom less than one day. After the headache she felt all played out. She had a history of hemorrhages from the uterus and a fibroid that passed without an operation. Her teeth were all extracted, tonsils removed, nose and eyes examined, and a hysterectomy had been advised with the hope of relieving her headaches. Her mother had suffered with headaches of the migraine type and also rheumatism and gout.

After being put on a diet, and treatment prescribed, she had some slight attacks of headaches which rapidly improved. At the end of a few weeks she was entirely free from headaches and has remained so for a year. She is still very careful of her diet. The only severe headache she had after her second visit was at her menstrual period. I have noticed this recurrence at the menstrual period in several cases.

Case 2. Mrs. H., aged 38, suffered with severe headaches of the migraine type which lasted for ten hours, lately, becoming very frequent. She had a constant pain in the right eye, and back of

the neck. She had in addition, a lame shoulder and a pain in the left arm, running down to the elbow. She was always constipated and bloated, and had a good many pimples and festering blackheads on her face. She was always sick as a child with tonsillitis and ear trouble. She consulted an oculist about her headaches and her glasses were changed. Her mother had suffered with arthritis deformans and her sister and her father both had suffered with headaches.

After being put on a diet she never had a headache after her first visit. The pain in her right eye and at the back of her neck disappeared in three days. One month after her first visit she reported that her headache had gone, her complexion was clear; she had no bloating and her bowels were regular. The neuritis in her left arm persisted for two months, then gradually disappeared.

There evidently was not much inflammatory change in this case. Usually most cases of neuritis are most obstinate. They are not cured by diet, but recurrence may be prevented.

Case 3. Mr. E. K. S., aged 30, had periodic headaches since childhood, but recently they had become so bad and so frequent that for 2 or 3 days a week he was not fit for work. No physician had ever been able to relieve his headaches. He was subject to frequent attacks of bronchitis and had had an attack of broncho pneumonia for several years in succession. His mother was subject to muscular rheumatism and had gouty nodes in her fingers; while his children were subject to cyclic vomiting.

The first time he tried the diet he had a continuous headache, due I believe to the withdrawal of coffee. After the first week his headaches disappeared and he found he could completely control them by diet. He has done considerable experimenting with different foods but finds that he must give up meat soups, fruit and eggs.

Case 4. Mrs. X., aged 36, was never free from headaches since the age of thirteen, only sometimes they were more bearable than at others. She described three kinds of headache, congestive, typical migraine, with nausea and eye symptoms, and neuralgia. She had tried everything known to medical science both in this country and in Europe, for relief of her headaches. Operations were performed on her nose and throat, an X-ray had been made of her teeth, and several had been extracted; her eyes had been examined, and found to be normal. She had been put on various diets, and hydropathic measures, rest cure, forced feeding, etc., had been tried, but in vain. She had a history of frequent attacks of tonsillitis, middle ear and mastoid disease, hyperacidity, ulcer of the duodenum (ruptured), peritonitis with adhesions, X-ray, enteroptosis, floating kidney, hysterectomy for fibroid tumor, with continued headaches. Her father's mother had suffered with gout, hyperacidity, and had headaches all her life; her father's father had chronic bronchitis and enlarged prostate; her mother's mother had purpura, hyperacidity, and cancer; her father had hyperacidity, phosphaturia and prostatic trouble; her mother had hyperacidity, migraine, purpura and gall bladder trouble; her sister had neurasthenia, gall bladder trouble, and her sister's children had been subject to headaches and cyclic-vomiting.

After being put on the diet and treatment prescribed, she became entirely free from headaches, and continues so, except when diet is overstepped.

This patient is particularly susceptible to egg. After eating an egg, she is affected as though morphine had been taken, with a feeling of heaviness in limbs and body, slight vertigo and nausea followed by extreme drowsiness. This condition continues for about an hour to be followed by a blinding headache lasting from 36 to 48 hours.

Case 5. Mr. O., aged 59, had headaches since a child. Formerly there was a considerable interval between the headaches, now they had become frequent, sometimes accompanied with nausea. He was an active business man, but the headaches were so bad recently, that he had, after getting no relief from physicians, contemplated giving up his business. His former diet consisted of: breakfast, prunes, grapefruit, soft boiled egg, bread, jam, coffee; dinner, meat soup, meat, veal steak, roast beef, chicken, etc., vegetables, coffee; supper, cold meat, potato salad, salmon, sardines, omelet, coffee, and an apple or an orange at bed time. He often had attacks of tonsillitis, and his tonsils had been treated. His eyes had also been examined; and his sinuses on examination proved to be clear. About one year ago, he had an attack of malaria, and since then his headaches had been worse. His sister always had headaches till change of life; and his mother had suffered with headaches.

After being put on a diet, and treatment prescribed, he became entirely free from headaches in three weeks.

Case 6. Mr. P., aged 56, had dull headaches most of the time. He was easily fatigued, felt good

for nothing, melancholic and depressed. He had consulted physicians in this country and abroad and had spent some time in Sanitariums. The former diagnosis of his case was neurasthenia.

After being put on a diet, and treatment prescribed, he came back in a few days and wanted to know what I had given him to make him feel so fine. He took up his work with renewed interest, and with careful attention to his diet, has kept free from headaches and is entirely recovered from his neurasthenia.

Case 7. Mrs. M., aged 45, was troubled with pains in her muscles and joints, and very severe headaches. These had formerly been periodic of the migraine type but had recently become so severe and constant that she consulted a surgeon thinking that she must have a tumor in her brain. The surgeon sent her to me. In addition to her headaches she was troubled with insomnia. Her blood pressure was high but her urine was negative. She was very obese and a heavy eater.

On the prescribed diet, her headaches stopped almost immediately and she has remained free from them. In a few weeks her blood pressure was found to be considerably lower and she was no longer troubled with insomnia.

Case 8. Mr. N., aged 40, had continued pain in the shoulder muscles and in the back of his neck. He had a full feeling in his head and a moderately severe headache most of the time. He was very nervous and mentally depressed most of the time. After being put on a restricted diet his headaches and muscular pain entirely left him. His nervousness and mental depression cleared up and he says now he feels perfectly well. It is interesting to note that his blood pressure which had been previously 160-120 was, on a restricted diet, reduced to 120-90.

Case 9. Mrs. A. K. T., aged 45, is a case of hyperthyroidism and anaemia, but is introduced to show the beneficial effect of the diet on hyperthyroidism and also to show that the indigestion and excessive bloating improved on a starchy diet which is not usually supposed to be indicated for that condition. Her mother had had sick headaches. This patient was extremely nervous, very short of breath, easily fatigued, had a small goitre, a marked tremor and a pulse of 120. She had in addition, a bath pruritis and a marked twitching of the legs, at times so bad that she could not sit still. She was very anaemic, her hemoglobin (Sahli) was 45.

Having been put on a non protein diet and rest, and given a 5 grain Blaud pill after meals, she rapidly improved and in six weeks all her symptoms had entirely disappeared though the goitre remained. What is especially interesting in this case was the fact that a carbohydrate diet was not contraindicated in the presence of anaemia and symptoms that are usually attributed to a starchy diet.

Case 10. Mr. H., aged 58, had been declined by a life insurance company on account of high blood pressure. He complained of dizziness, headache and a feeling of depression and was easily fatigued. On examination his blood pressure was 180-140 and his urine showed a trace of sugar. In spite of the sugar in the urine he was placed on the prescribed diet. He steadily improved and said that within a few weeks he never felt better in his life. He lost his feeling of depression, his headache disappeared, and he was able to take severe physical exercise without being fatigued.

On a diet mainly of cereals and vegetables, his blood pressure was reduced to 140-110 and what seemed most remarkable, the sugar disappeared from his urine.

Case 11. Miss S., aged 33, had sick headaches all her life. She was very anaemic, weak and nervous and had lost 30 pounds in the last six months. Her mother had suffered with sick headaches up to the age of 50.

She was put on the non protein diet and given iron and arsenic for her anaemia. One month later she was feeling better and stronger and had no headaches. Six months later she had regained her lost weight, her blood was normal, and she had no return of her headache. This case illustrates the fact that the diet is not contraindicated in anaemia.

Case 12. Mrs. A., aged 51, had suffered from periodic headaches for 25 years. Severe headaches commenced at the age of 18, at first only at the time of menstruation but afterwards becoming more frequent. The headaches for many years had been of the migraine type, usually once a week, last for two days and sometimes longer. For the relief of her headaches she had had her gall bladder drained, her appendix removed, also a fibroid tumor. Her tonsils had also been removed.

She was put on a non protein diet with the result that she was entirely free from headache unless she overstepped her diet. Indulgence in fruit or chocolate was very apt to bring on a headache.

CONCLUSION.

These cases would ordinarily be too few in number upon which to base any positive conclusion. However, as the results in every case that I have treated in the past year have been uniformly successful I do not hesitate to say that migraine and periodic headaches are primarily due to an inherited deficient metabolism and can in every instance be cured by a *properly* restricted diet. I use the word primarily advisedly, for I have no doubt that migraine and other headaches have been relieved by other means than diet, by the removal of focal infection and especially by the relief of eye strain but I would explain the results by the fact that secondary causes localize protein poison manifestations. As a man may have a myalgia in his golf arm or a lumbago from overstraining the lumbar muscle, so will eye strain localize the protein poison manifestation and contribute to the headache.

Although any contribution to the cure of migraine and other headaches is of considerable importance yet the main issue of this paper is much more important, that is, the principle upon which the treatment is based. If that is true, as I believe it is, it will revolutionize our ideas concerning the etiology of many diseases.

TREATMENT OF THE ACUTE RESPIRATORY INFECTIONS.*

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FOND DU LAC, WIS.

The arrangement of the program of this symposium is such as to render it unnecessary for us to attempt to discuss in detail the treatment of this group with their individual concomitant symptoms and complications; nor indeed would it be advisable.

We prefer rather to speak only of measures applicable to the entire group with but a brief consideration of the treatment of a few of the more important symptoms and complications. Too little attention has been given the prevention and control of the diseases belonging to this group. It is the duty of the medical profession to insist upon earlier isolation of the acute respiratory infections, knowing that a simple untreated Coryza may terminate in sinus infection, bronchitis or measles, with secondary pneumonia—or if not isolated, may have spread infection to a large number of people.

Isolation early enough to be of any value can be accomplished only through the co-operation of the profession and the public working in harmony with the Health Department.

Quarantine regulations here as in other communicable diseases must be so sane, just and reasonable as to meet the approval of both the medical profession and the laity. Regulations entailing undue economic loss have always been evaded by a certain proportion of both the profession and laity. The interest of the community should not be concentrated so much upon isolation of the patient as isolation of the disease. The public must be educated in the principles of preventive medicine, the ideal being public co-operation with Public Health Nurses and full-time Health Officers working in harmony with the medical profession.

No prophylactic measures have as yet supplanted hygiene, sanitation and isolation. The present limitations of the value of vaccines in the prophylaxis of influenza and pneumonia seem to be due to the variation of their bacterial flora, not only with each epidemic but in different localities during each epidemic.

The treatment of these diseases is still the subject of much discussion and will continue to be until a specific treatment is found.

In the meantime there are a few general measures whose value is unquestionable and which will bear repetition and considerable emphasis. The first of these is rest and this means confinement to home and bed from the onset of fever until convalescence is established.

The importance of this measure was impressed upon the public during the late epidemic of influenza and they should not be allowed to forget its value.

Ventilation means fresh air in motion of agreeable temperature and humidity—these factors being judged by the patient's mental and physical response. An open window and a cold room do not necessarily mean good ventilation.

Gastro-intestinal disturbance not only appears early but should always receive special consideration. It is not sufficient to tell the patient to be careful, but a rigid diet should be outlined for him —one which is high in carbohydrates and low in

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fats and protein, with plenty of fluids. We always insist upon the free use of the citrus fruits as the most agreeable and easily assimilable of the carbohydrates.

Elimination should be early and free. We have found the salines, citrate and sulphate of magnesia to be the most satisfactory drugs in our experience.

The use of the alkalies in the form of the citrate and bicarbonate of soda usually throughout the entire stage of the disease is based upon clinical results, the assumption being that acidosis or any marked diminution of the alkaline reserve means a reduction of bodily resistance.

To a certain extent, fever is both a measure of infection and expression of individual resistance, and while its production is a chemical process involving increased metabolism, heat dissipation is largely a physical process, requiring the usual attention to hygiene and hydro-therapy.

Quinine in severe infection should be continued throughout the duration of fever at four hour intervals. Its use usually anticipates the need of any special antipyretic drugs. Whether the good effects of quinine are due to sedation of the thermogenic center, to specific protection of the tissues against bacterial toxins or to its known value in diminishing excessive metabolism need not be discussed. Its clinical value seems to be established and in sufficient dosage can be depended upon to control the fever.

Cough is a symptom common to the entire group and from the patient's viewpoint frequently the most important, especially if severe enough to produce much fatigue, loss of sleep and rest. Being a reflex expression of irritation in the vago-sympathetic system, it is frequently out of all proportion to the severity of the disease it accompanies.

Its treatment then should rest upon the physical findings. The unproductive cough of the early stages requires sedation with some encouragement of secretion, and nothing seems to fulfill these indications so well as Codein or Dover's powder in small divided doses, replaced later with ammonium chloride, when a freer secretion is desired. A certain amount of opium is necessary for the control of cough and we prefer codein in a suitable vehicle. We would like to emphasize the importance of giving the codein alone in many cases, it being so much easier to control both the cough and dosage of the drug than when given in combination.

The so-called ethical cough syrups of the advertising pharmacist are the most objectionable of the proprietaries and are incompatible with the practice of scientific medicine. We know of no indication for their use.

In the treatment of pleurisy we would only urge the earlier differential diagnosis between effusion and delayed resolution by the freer use of the exploring needle when in doubt.

Meningeal and sinus affections must be treated by the accepted methods.

The treatment of circulatory failure is easily one of the most important complications.

How often have we said or heard it said that if the heart will only keep going a little longer the patient will recover. And yet we have too often curtailed that patient's cardiac reserve at the very outset by the use of the coal tar products, for the relief of symptoms of short duration which could have been relieved by far better means.

Conservation of the patient's cardiac reserve should be a matter of daily solicitation—active treatment to be instituted on the first evidence of cardiac failure.

We rely chiefly upon digitalis, camphor, pitutrin and occasionally caffein. We believe that they represent the most valuable drugs with which to combat the circulatory failure in influenza and pneumonia, combining as they do the stimulation of the camphor and caffein, the vaso-pressor effects of pitutrin and the sustaining effect of digitalis on the weakened heart muscle.

We are dealing with a group of acute self-limited infections where death rarely occurs except as the result of some complication, usually pneumonia and circulatory failure. Our skill then should be measured by our ability to prevent complications and cross infections.

Therapy is not dependence upon any drug or set of drugs with the idea that they are in any way specific. There are, however, a number of drugs of unquestioned value, which should be selected on the basis of their established pharmacology to meet certain definite physiological disturbances.

Responding to an appeal from Dr. Raphael Reygadas, President of the Mexican Red Cross, the American Red Cross has forwarded a shipment of anti-plague serum to aid in stamping out the bubonic plague which since early in June has been making headway in Vera Cruz.

DIAGNOSIS AND TREATMENT OF PERNICIOUS ANEMIA.*

BY ALBERT R. TORMEY, A. B., M. D.,
MADISON.

Pernicious anemia, or as it is sometimes called primary, idiopathic, or Addisonian, may be defined as a chronic anemia of unknown origin, characterized by hemolysis and imperfect action of the blood-making organs.

It was first described accurately by Thos. Addison sixty-five years ago, and practically no progress was made in more thoroughly understanding this disease until recent years when great steps have been taken.

This paper is based on a study of fifty-eight cases and the following facts were obtained.

DISTRIBUTION.

It is found in practically every country in the world, and in increasing numbers due chiefly to the fact that clinicians are paying more attention to the study of the blood picture than was the custom ten or twenty years ago. Two of these cases were observed in the University Hospital, Toulouse, France, where they are very familiar with the disease.

ETIOLOGY.

The cause is not known, but modern clinical evidence points to an infectious origin, probably to a streptococcus, of the hemolytic group.

Percy[1] thinks that it is probably a hemolytic infection, and in nine cases of pernicious anemia, the hemolytic streptococcus was grown from three of the nine spleens removed, from four of the seven gall bladders removed, and from six of the seven appendices removed.

Mix[2] believes that the origin may be traced to some member of the spirochete family, owing to the fact that many cases improve, temporarily, under antiluetic treatment, while Petersen[3] reports three cases due to pregnancy.

Kahn[4] supports the theory that the liver fails to neutralize the poisons generated in the gastro-intestinal tract, resulting in the absorption of these poisons by the blood with the resulting blood destruction, while Fiessinger[5] reports a case of pernicious anemia following a suppurating pneumothorax which improved when the infection was arrested and the focus drained.

Stovall[6] has reported a series of cases of intestinal parasites, in which the blood picture simulated that of pernicious anemia.

Last, but not least, William Hunter,[7] who has done a great deal of work in this disease thinks that it is essentially of an infective nature.

This series was equally divided between males and females, there being twenty-nine of each. Fifty-five per cent of the cases were between the ages of forty and sixty. The youngest was ten years of age. The disease respects neither occupation, mode of living, nor environment, attacking in this series eight farmers, four business men, two insurance agents, two railroad men, two salesmen, two physicians, two students, two managers, and one of each of the following occupations: printer, lawyer, bookkeeper, manufacturer, and clerk.

CHARACTERISTICS.

There are two types: (a) chronic, (b) acute.

(a) The great majority of cases are of chronic nature, and as it is impossible to improve on the classic description given the disease by Addison in 1855 I will quote him as follows:

"It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to the earliest feeling of that languor which is shortly to become so extreme.

"The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted; the pulse perhaps large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement. There is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and the tongue seem bloodless; the flabbiness of the solids increases; the appetite fails; extreme languor and faintness supervene, breathlessness and palpitation being produced by the most trifling exertion or emotion; some slight oedema is probably perceived about the ankles. The debility becomes extreme; the patient can no longer rise from his bed; the mind occasionally wanders; he falls into a prostrate and half-torpid state, and at length expires. Nevertheless, to the very last, and after a sickness of perhaps several months (or years) duration, the bulkiness of the general frame and the obesity often present a most striking contrast to the failure and exhaustion observable in every other respect."

*Read before Dane County Medical Society, Stoughton, Wis., Oct. 19, 1920.

To this masterly description may be added several gastro-intestinal symptoms. Pyorrhea is frequently present and there is generally a marked glossitis and achylia gastrica. The absence of the papillae of the tongue is so striking that it is often called a "bald" tongue. Friedenwald[8] in a study of seventy-four cases found achylia gastrica in seventy-four per cent, with marked dimunition in nineteen per cent and normal gastric secretion in seven per cent. There is always diarrhea with nausea and vomiting at one stage of the disease.

Spinal cord changes of the spastic type occur in from twenty to sixty per cent of cases according to observers. In this series, thirty-five per cent showed some destruction to the columns of Goll and Burdach and at times to the lateral bundles. Numbness and tingling are common findings. This is an important point, as too often a patient is told that he has tabes dorsalis when it is clearly a case of pernicious anemia with spinal cord degeneration. Unlike tabes, the reflexes, due to the blocking of the lateral bundles, are often increased rather than diminished. The frequency of cord changes in pernicious anemia is not generally appreciated by clinicians.

(b) Acute type. This is a rare finding. Of the fifty-eight cases observed by me, only two were of this type. The following history will emphasize some of the clinical aspects of the acute form of the affection.

A young girl student, age 17, entered the hospital on Jan. 17, 1918, complaining of weakness, loss of weight, vomiting and diarrhea.

Her past history was interesting in that she had yellow jaundice in 1912 and typhoid fever in August, 1917.

She had not fully recovered from the effects of the typhoid infection in November, 1917, when she noticed that she did not get her strength back, would tire out easily, had no ambition or "pep", was pale, listless, and became very weak and dyspneic on exertion. Lost ten pounds in November, but remained up and around until December 30, 1917, when she was too weak to get out of bed. Food made her nauseated, and she would vomit considerable bile and mucus. Epistaxis commenced the first week of December and she had five rather profuse hemorrhages. Chronic diarrhea since November fifteenth—having five or six movements a day. There was no swelling of the extremities but there was a sensation of tingling in the toes.

The general development of the body was well preserved. The red cell count was 840,000; white cell count 8,200; hemoglobin thirty per cent, with color index of 1+. The stained specimen showed marked poikilocytosis, anisocytes, a few normoblasts and megaloblasts. The differential count showed forty-five per cent small lymphocytes and twenty-five per cent polymorphonuclears. The blood platelets were increased. The stools were negative for parasites. The treatment of this case will be considered later.

BLOOD FINDINGS.

The diagnosis of this disease cannot be made solely upon the blood picture, important as it may be.

The red blood corpuscles are greatly diminished, the average in this series being 1,519,270 per c.c. The lowest count was 760,000. In Cabot's[9] review of 1,200 cases, the average count was 1,200,000 per c.c. Quincke's case of 143,000 per c.c. is the lowest on record. The hemoglobin is decreased, but not so much in proportion as the red blood cells, giving a high color index which is one of the most constant findings.

The stained specimen shows nucleated red blood corpuscles and large numbers of misshapen, large and small cells (microcytes and macrocytes) resembling "dumbbells", "doughnuts", "commas", "ovals" and "pears" (poikilocytes). Stippling of the red cells is common, with dark blue or blackish discoloration (polychromatophilia). The nucleated blood cells are often seen,—varying in size and known as microblasts, normoblasts, and megaloblasts. The blood platelets are reduced, and often absent according to Pratt.

There is a leucopenia present in practically all cases, the average in this series being 6,230, while the lowest count was 1,000. The coagulation time is prolonged, and Smithies[10] describes the appearance of the blood as watery, milky, or greasy, and sometimes it is nearly impossible to smear it evenly on a slide.

The next question is: what are we going to do for the patient after we are satisfied with the diagnosis? As I look at it, the main thing is to get the patient's blood picture as nearly back to normal as it is possible, and at the same time to counteract the effects of any low grade infection that may be present. It is also necessary to improve the patient's general health, as most of these patients show evidence of under-nournishment. Smithies[10] has shown that there is a pancreatic

achylia especially for proteins and fats. To overcome this and also the achylia gastrica, it is best to limit the diet with respect to fats and proteins and improve the digestive function by giving ten drops of hydrochloric acid after each meal.

Everyone admits that blood transfusion is the method of choice in attempting to bring back the patients' blood picture to normal. I firmly believe in massive transfusions of whole blood (uncitrated and undiluted) as the best method of obtaining such a result and have found Dr. Nelson Percy's modification of the Kimpton-Brown paraffin coated transfusion tube a very practical and useful procedure.

Percy believes in splenectomy, and recently W. J. Mayo stated that splenectomy was indicated in early cases of pernicious anemia following transfusion.

Anders[11] reviewed 362 cases of pernicious anemia which had been transfused. He found that in 204 or 56.3% there was an initiation of remissions, and comes to the conclusion that transfusion offers more for this incurable disease as a means of prolonging life than any other form of treatment.

Bloomfield,[12] in a rather discouraging report of fifty-seven cases from Johns Hopkins Hospital, admits that transfusion enables the blood count to be raised to a higher level than it reaches in cases not so treated, and that patients usually had a sense of well-being while the count was high.

Between transfusions a careful search should be made for any focal infection in teeth, tonsils, sinuses, or other parts of the body. If such infection is found, it should be removed.

The most important part of blood transfusion is the grouping of the donor and recipient. The simplest method of doing this is according to the Brem[13] modification of the classification worked out by Moss[14]. All the equipment one needs is some serum of groups II and III (which is furnished by the State Psychiatric Laboratory) and a few glass slides. The technique is as follows:

Method for grouping donor and recipient for blood transfusion.

1. Place a drop of serum of group No. 2 at the edge of a glass slide.

2. Place a drop of serum of group No. 3 in the center of slide.

(Insert Cuts.*)

Group II always on side.

Group III always in center.

3. Place a drop of blood of person being tested (donor or recipient) on serum of group No. 2. Then another drop of blood on serum of group No. 3, and mix separately with different needles or the end of another glass slide. The idea is not to mix the two serums (No. 2 and No. 3) together. Agglutination appears first as a faint "brick dust" precipitate which rapidly becomes more definite until the clumped corpuscles stand out as macroscopic shreds and irregular masses.

The reaction takes place in ten or twenty seconds and can be seen by the naked eye, if marked. It is best to hold the slide over something white. If doubtful of reaction wait for four or five minutes, put under microscope and the agglutination, if present, will be very clear.

4. As shown on diagram below if there is no agglutination or bunching of the corpuscles in either of the serums, then we know the blood tested is in group No. 4, which comprises about sixty per cent of all persons.

No agglutination.

∴ Donor in group IV and the "universal donor".

5. If the blood cells are agglutinated by the serum of group No. 2 we know the person tested is in group No. 3, which comprises about seven per cent of all persons.

Agglutinates II.

∴ Donor in group III must have recipient in same group i. e. III or group I.

6. If the blood cells are agglutinated by the serum of group No. 3, we know the person tested is in group No. 2, which comprises about twenty-eight per cent of all persons.

Agglutinates III.

∴ Donor in group II must have recipient in same group, i. e. II or group I.

7. If the cells are agglutinated by both serums, the person tested is in group No. 1, which comprises about 3 to 5 per cent of all persons.

Agglutination in both.

∴ Donor in group I must have recipient in same group, i. e. I.

SUMMARY.

(a) Group both patient and donor.

(b) For a group I recipient any donor may be used.

*It was impossible to have the cuts for illustrating this article made in time before publishing the paper.

(c) For a group II recipient a donor in either groups II or IV may be used.

(d) For a group III recipient donors in either groups III or IV may be used.

(e) For a group IV recipient donors in group IV only must be used and the converse.

In other words, group I is the "universal recipient"; group IV is the "universal donor".

(f) A Wassermann test should be made on all donors.

This method has proved very satisfactory and we have had one reaction in the last twenty-two transfusions, and this was due to an inactive group III serum.

TECHNIQUE OF TRANSFUSION.

The following method was worked out by Dr. Nelson Percy at the Augustana Hospital, Chicago, and is an indirect closed method.

DIAGNOSIS AND TREATMENT OF PERNICIOUS ANEMIA.

The apparatus consists of a specially designed glass tube of 700 cubic centimeters capacity, one end of which is drawn out to a small cannula which may be inserted directly into the vein. The other end terminates in a small tube to which a "Y" connection is made. To one arm of the "Y" a rubber tube is attached to aid in injecting the blood. An open dissection of the vein of both the donor and recipient is made. The tube is coated inside with solid grocer's paraffin, and just before the tube is inserted into the donor's vein, about 25 cubic centimeters of sterile liquid paraffin is aspirated into the tube. As the tube fills, the liquid paraffin will float on top, thus preventing the blood from coming in contact with the air. The cannula of the tube is inserted distally into the donor's vein and the tube is allowed to fill. The flow of blood is accelerated by the use of an ordinary blood-pressure cuff proximally placed and pumped up to five or ten millimeters of mercury, less than diastolic pressure. This impedes the venous return, but does not interfere with the arterial flow, thus making the entire arm a blood reservoir and increasing the pressure in the vein elected. Slight suction facilitates filling the tube. Six hundred cubic centimeters can easily be obtained in three minutes, when the tube is transferred to a vein of the recipient (usually the cephalic), and the blood is forced into the patient by means of an atomizer bulb and rubber connections. The tube can be emptied in about a minute and a half, but greater deliberation is advisable so that possible haemolytic phenomena may be noticed, acute dilatation of the heart avoided, and so that aeration of this venous blood may be more ready. Inhalation of oxygen in very weak patients is advisable during the injection of large amounts of venous blood. The average amount of blood given each time is from 500 to 700 cubic centimeters, and one will note that the plain, whole blood is used, not being diluted with any foreign substance.

Advantages of this method:

1. Known quantities of blood may be administered.

2. Six hundred cc. can be given in from seven to ten minutes from the time the cannula is inserted into the donor.

3. The blood is not diluted. It is whole blood.

4. No air comes in contact with the blood, thus lessening the liability of clotting.

5. There is direct communication between the vein and the chamber by a simple paraffin-lined glass tube. There are no metal, rubber or other connections whose edges cause resistance to the flow.

6. The blood vessel need not be ligated. A few sutures closes the defect and the same vein may be used time after time.

7. This method has only one-fifth as many reactions as the citrate method.

8. All the apparatus is very simple.

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ADDRESS OF CHAIRMAN.*
EYE, EAR, NOSE AND THROAT SECTION.
PARENTERAL INJECTIONS OF MILK IN DISEASES OF THE EYE.

BY C. ZIMMERMANN, M. D., F. A. C. S.,
MILWAUKEE.

It is the duty of the chairman of this section to deliver an address. I regret very much not to be able to be present, but, not wishing to lack in my obligation, I have written a message which the secretary kindly consented to read to you.

The subject of the chairman's address usually deals with general remarks and statistics, but, as there is nothing of importance to report in that line, except that the program committee decided that the sectional papers should not be too technical, but also of interest to the general practitioners who are invited to attend our meetings, I hope you will grant me the permission to dispense with the old custom and discuss a medical subject. My theme is: "Parenteral Injections of Milk in Diseases of the Eye."

The therapeutic aims, based on active immunization, to influence the course of infections by parenteral introduction of the morbid agent into the body, are the essence of specific vaccine therapy. Its action was attributed to the formation of specific antibodies. Further observations, however, were in contrast to this conception. They showed that the results of the vaccination do not depend upon the increased bactericidal action of the blood, but merely upon the reaction of the tissues. Diseases were cured by injections of vaccines of bacteria specific to an entirely different disease, *i. e.*, by heterovaccine therapy. Thus, E. G. Darier recommended anti-diphtheric serum for the treatment of various inflammations of the eye. Kraus, Luedke, and R. Schmidt saw the efficient principle of heterovaccine in the action of parenterally introduced albumen, foreign to the species.

Instead of the heterovaccines, foreign protein, injected in the most different infectious processes, often brought about sudden recoveries. As such a protein, milk was used in various general dislocal inflammations. Mueller and Thanner reported surprising results by milk injections in diseases in the eye. "They formerly never obtained in the treatment of any painful eye affection such rapid subsidence of pain and photophobia as by the milk treatment in iritis, excepting only the operative treatment of Glaucoma." After their recommendation the milk injections have been employed by numerous authors, and we have reports from several eye clinics on their results in a large series of eye affections.

The technic is this: At the average 5 CCM of fresh milk, boiled from three to four minutes and cooled to the temperature of the body, is injected subcutaneously into the gluteal region. Pillat used in the new-born and in children of up to 5 years of age, from 2 to 3 CCM, of from 5 to 15 years, from 5 to 8 CCM and in adults 10 CCM. At first the injections were made into the muscles, but as the market milk contains abundant microorganisms, which, especially the most violent, cannot be destroyed by boiling for four minutes, occasionally deep-seated abscesses were encountered. Four hours after injection the temperature rises to 39 C, sometimes 40 and more, and after this maximum falls within four to six hours to normal. If the temperature is very high the patients complain of headache and general malaise, which speedily subside after the cessation of the fever. Hence it is advisable to make the injection in the morning, so that the patient be under medical supervision during reaction.

The injection may be repeated after two days and the doses increased. The subsequent temperatures generally do not reach the same acme as after the first injection. In a rather large percentage of cases albuminuria up to 0.7 per cent was observed, with hyaline casts, epithelia and leucocytes, but disappeared on the second day. The first few injections are determined for the therapeutic effect. If this is not attained, not much can be expected from a continuation. In general, the treatment is finished with from five to six injections.

Although L. Mueller made over 1,000 injections of milk without any complications a number of authors reported chills, formation of abscesses,

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*Read before the section, State Medical Society of Wisconsin, La Crosse, Sept. 9, 1920.

anaphylactic symptoms, local and general, herpes labialis, exanthemata, hyphema in iritis, protraction of the fever to three weeks, rekindling of tubercular processes, perforation of deep ulcers, proteinogenous cachexia, anaphylactic shock, and even anaphylactic deaths. (Steiger, Berneaud, Maschler, Holler, Koenigstein, Lubliner, Reiter, Sachs, Schittenheim and Weichert.) To avoid these, Lubliner recommends making the second injection not before the fifth day. Jickeli, Holler, Steiger, and others therefore emphasize the desirability to find a preparation of known constitution which may be administered in uniform doses. They decidedly warn against the generalization of milk injections as a therapeutic means, on account of the danger of anaphylactic deaths, and recommend great caution in their application.

Instead of the milk which by four minutes' boiling is not made sterile, and, if boiled to absolute sterility, is claimed to lose its effect, the Saxon Serum Works of Dresden brought out a preparation under the name of ophthalmosan which insures sterility. After its injections the fever was less intense, but the therapeutic effect also less, as the higher temperature and the more violent the accidental phenomena the more favorable was the effect on the eye. Berneaud, however, recommends the ophthalmosan injection for the general practitioner, Holler Merk's deutero-albumosis, Szily and Sternberg emulsion of typhoid bacilli in gonorrheic ophthalmia.

The mode of action of the parenteral milk injections is not yet sufficiently known. According to Abderhalden the organism reacts to the parenteral injection of albumen, foreign or similar to the species, by the formation of defensive ferments. In proportion to the different organic and inorganic constituents of the milk and the reactive capability of the body these must vary. Thus Englaender successfully employed inorganic substances, e. g., salt, in infectious diseases. Berneaud's experiments on the action of the different constituents of the milk are not yet concluded.

Holler attributes great importance to fermentative processes in the action of proteins by which specific curative processes are mobilized, as Luedke proved increase of complement and Heilner of protective ferments. According to Berneaud, the action cannot be specific, because no immunity is attained as the relapses in eczematous Keratitis demonstrate, and the fact that in luetic parenchymatous Keratitis the affection of the second eye cannot be prevented by the injection. The inflammatory products are rapidly removed, so that the natural forces of immunity of the organism can fully develop and bring about recovery from the disease. Thus in iritis, first the injection and exudations in the anterior chamber disappear. The milk acts as an absorbent, not as a disinfectant.

The increase of temperature is given great importance, on account of the better results from milk injections the higher the temperatures were. This is in analogy to the favorable influence of intercurrent febrile diseases on the course of inflammatory affections, e. g., the remarkable improvement of Trachoma during an epidemic of scarlet fever in forty children, and of a case of polyarthritis, observed by Huehn. The fever also causes changes of metabolism, blood circulation, and organic functional disturbances. Lindner and others ascribe the astonishing results in gonoblennorhoea to the deleterious influence of higher temperature on the gonococci, the most sensitive ocular bacteria to heat. This corresponds, perhaps, with the better results of milk injections in gonorrheic epididymitis and orchitis than in ordinary gonorrhea, because the urethra has a lower temperature than the trunc. Pillat thinks the effect of higher temperature lies in increased protective power of the organism and the products of integration of albumen, where absorption may be the effective element. The duration of the higher temperature may be too brief for damaging the gonococci, and the longest persistence of gonococci in the upper fornix which in consequence of its protected site has a higher temperature than the other parts of the eye, finally the disappearance of gonococci if only a temperature of 38 C. was reached after the injection, seem to speak against it. Von Thaller and R. Mueller see an important factor, aside from the higher temperature, in the leucocytosis, and R. Mueller in the hyperemia and transudation at the inflammatory focus, corresponding to the experimental anaphylactic shock in animals.

To decide this experimentally, Guist placed in two cases of one-sided blennorrhoea secretion and epithelia, scraped from the conjunctiva, into two test tubes with physiological salt solution in the incubator at 37. After the injection of milk the conjunctiva of the healthy eye was scarified and, when the highest temperature was reached,

scrapings from it brought into one tube at 37 degrees. Four hours later the gonococci in this tube were swollen, not well stained with methyl blue. Almost all polynuclear cells were loaded with gonococci; whereas the gonococci of the control tube were scarcely changed and only exceptional in the leucocytes. The difference was so striking that Guist is inclined to assign the main effect of the milk injections to the increased activity of the cells and not to the higher temperature alone.

With regard to the therapeutic results, I may here quote from the detailed report by Berneaud from the Eye Clinic in the University of Kiel on 225 cases, treated with milk injections, viz., 27 of parenchymatous Keratitis, 65 per cent eczematous Keratitis; 20 of trachoma, 40 of iritis, and 10 of choroiditis. According to Berneaud, milk injections exert an undoubtedly favorable influence on inflammations of the eye, with unusually good results in some cases. In parenchymatous Keratitis, pain and photophobia were relieved only in 50 per cent of the cases. An affection of the second eye could not be prevented. In eczematous Keratitis—conjunctivitis photophobia and pain almost always subsided, and the general condition of the children improved. Relapses, however, could not be averted. In iritis the results were favorable almost without exception. Even severe tubercular affections of the iris showed remarkable improvement. In disseminated choriditis, vision may be greatly ameliorated as long as the neuro-epithelia have not been damaged. Ulcerations of the cornea in trachoma were beneficially influenced, but not the trachomatous process itself. Ulcers of the cornea from foreign bodies healed rapidly and hypopyon readily subsided. If after perforating injuries an infection set in, it was alleviated by the milk injections. In a case of internal hemophthalmus with only perception of light the patient could count fingers after two injections. Nothing definite can be said on results in sympathetic ophthalmia, but a trial with injections is recommended. Brilliant results may be obtained in ophthalmo-gonorrhea, so that an attempt with the injections is imperative in every case.

In general, other reports coincide with this (Maschler, Jickeli and others). Elschnig, however, had no results in two cases of blennorrhoea. Others, e. g., Bachstez, saw splendid effects in some cases, in others not. He thinks that some strains of gonococci, e. g., in a series of cases from the same source of infection, may be refractory to the injections. Especially was this the case if gonorrhea was combined with trachoma (Koenigstein, L. Mueller, Lauber), or if gonococci occurred in symbiosis with other bacteria, e. g., Xerosis bacilli, Koch-Weeks bacilli (L. Mueller, Pillat). On the other hand, Rosenstein, from his good experiences on sixty-five cases of trachoma, urges the injections in each case, particularly with inflammatory symptoms. Very favorable is the influence of the injections on the beginning involvement of the cornea in blennorrhoea (L. Mueller, etc.). Uddgren in some cases made the surprising observation that the previously negative or doubtful Wassermann reaction was rendered positive by the milk injections and recommends them for provocation of the Wassermann reaction.

For illustrating an instance with, and one without, complications after milk injections, I beg to add two cases of my own observation:

Case 1. A boy, age 19 months, affected probably with military tuberculosis, was suffering from phlyctenular Kerato—Conjunctivitis with violent blepharospasm, rhagades at the temporal canthus, eruptions of the skin of ears, nose and mouth, enlarged cervical and mesenteric glands. Von Pirquet positive. Although the corneal infiltrations improved under the usual treatment (from March 6, 1920), photophobia and blepharospasm persisted obstinately. I therefore made, on April 19, 1920, a subcutaneous injection of 5 CCM of milk, boiled for ten minutes, into the gluteal region. The temperature rose in the afternoon, but the child seemed otherwise comfortable. The next day an eruption developed on face and body which was diagnosed by a dermatologist as measles, and the patient was sent home. A day later the condition of the eye was improved, and the, undoubtedly protein, rash had disappeared.

Case 2. A girl, aged 6 years, affected with corneal infiltrations and severe photophobia and blepharospasm which did not yield to treatment, was given an injection of 5 CCM of milk boiled for ten minutes. The result was most striking. the photophobia and blepharospasm subsided the next day.

Finding the results very much encouraging, I shall continue to try the injections in appropriate cases, but, for greater safety, I shall boil the milk for at least ten minutes, which did not seem to impair its therapeutic value.

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SALVARSAN FAKES.

The inclusion in the program of the All-America conference on the Great Red Plague, which meets in Washington early in December, of a discussion of the use of sundry arsenic "'substitutes" for arsphenamine (salvarsan) in the treatment of the plague is highly commended by Surgeon General H. S. Cumming, of the Public Health Service.

"Medical officers of the Service and others concerned," he said, "were especially cautioned last spring against the use of arsenic preparations not belonging to the arsphenamine group and were directed to use only the arsphenamine produced by licensed firms under the rules and tests prescribed by the U. S. Public Health Service.

"Testing of these arsenic preparations is very necessary because of their poisonous nature. If not properly prepared, they may be deadly no matter how carefully they are used or what is almost as bad, may be entirely worthless and may delude those who use them with illusory promises of a cure that cannot result.

"Some of the unlicensed preparations that have been foisted on the market were frauds pure and simple, containing no arsenic or other curative agent at all; but most of these were soon detected and their manufacturers punished. Many of those that are still being made result from efforts to circumvent the rigid tests required by the Public Health Service for the protection of the public and to market substitutes which are sold with unwarranted claims as to their curative value.

"Salvarsan (606) was devised by Ehrlich in 1910 after 605 unsuccessful experiments in trying to find a preparation of arsenic that would kill the germs in the patient's blood without also killing the patient. It was carefully protected by patents, taken out in Germany and elsewhere, which enabled enormous prices to be charged for it. During the war inability to import it from Germany, where it was chiefly manufactured, caused the United States to seize the patent rights and to authorize manufacture in this country.

"Later, in an effort to standardize the drug and to prevent the sale of worthless substitutes the name 'arsphenamine' was adopted; and licenses for its manufacture were granted by the Treasury Department to all persons who complied with certain conditions that were considered essential for safety and health.

"No one who does not comply with these regulations may call his product 'arsphenamine'; but there seems to be no law to prevent the manufacture of substitutes bearing other names and claiming to obtain the same results."

Several firms are now manufacturing arsphenamine and neo-arsphenamine under licenses from the Treasury Department. Every batch of their products is rigidly inspected and tested by the U. S. Public Health Service; and these products alone are used in the various hospitals and clinics of the Service. "We do not consider that any other products have been shown to be sufficiently reliable," says Dr. Cumming. "But the value of arsphenamine is well established."

CHIROPRACTIC—LUX ON SUBLUXATIONS.

Members of the medical profession have long been at a loss to know just what "chiropractic" is. They know what "chiropractors" are, but "chiropractic"—that has been a mystery! It remained for the Senate and General Assembly of the State of New Jersey to elucidate. An Act to Regulate the Practice of Chiropractic recently signed by the Governor of New Jersey gives to a palpitating medical world this vital information. Here is the opening paragraph of the act:

Definition of Chiropractic: The term chiropractic when used in this act shall be construed to mean and be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column, for the purpose of permitting the recreation of all normal cycle currents through nerves that were formerly not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity for conduction as they emanate through intervertebral foramina—the expressions of which were formerly excessive or partially lacking—named disease.

Lucidity itself! The New Jersey legislature said, "Let there be light on Chiropractic"—and, behold, it became the "art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities . . . . " Simplicity to the *n*th power. Bring on your Einstein theory—the New Jersey solons may oblige with a snappy definition.—*Jour. A. M. A.*, May 15, 1920.

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EDITORIALS

HENRY W. ABRAHAM.

THE sudden death of Doctor Henry W. Abraham, November 22, came as a distinct shock to the people of his community and to the medical profession of the State. Few, if any, Wisconsin medical men were held in higher esteem, were better loved or held a wider acquaintance than did Doctor Abraham. He died in the harness, as he would have wished to leave. He was called on a maternity case at three that morning. At eight, he was taken suddenly ill and was taken to his home. He died at four that afternoon, without completely regaining consciousness.

Dr. Abraham's career was one of a humble beginning. He was born in Germany, August 1, 1866, and came to America when three years old. In his earlier days, he taught school. He worked his way through Lawrence College at Appleton where he graduated with high honors. He received his medical education at Rush Medical College, graduating in 1898. He located in Appleton where he has practiced his profession since. In 1899, he was married to Miss Nellie Bassett who, with their daughter Margaret, survives him.

The State Medical Society has lost its leader. Doctor Abraham has been Councilor of the sixth district for many years. At the La Crosse meeting last September, he was elected President of the Society for the coming year, a year in which we were to celebrate our seventy-fifth anniversary and for which more important work was planned than ever before. He looked forward to this year as a period of service such as he had never been able to give and we could ill afford to lose him at this time. He had been a member of the State Board of Medical Examiners for the past twelve years and was one of its oldest members.

To know Henry Abraham was to love him, and it was the Editor's privilege to know him as a friend, as a fellow-worker in the Council and, when a youngster in the profession, as an older colleague practicing around the corner in the same small town. He was a leader always, but his personality was not that of the leader whose word is law and who brooks no interference. He was a man of soft word and kind thought, seeking counsel and

gathering around him those whom he trusted and who put trust in him. He made many friends through his gracious manner and he greeted all with a smile of welcome, ever ready to hear both sides of any case which might come before him in the many positions of leadership which he held. He commanded the love and respect of all with whom he came in contact.

A week before his death, I wrote Doctor Abraham, asking him for an editorial for this issue of the Journal. This editorial follows—"An Obligation." It would seem that a Divine hand prompted him to leave this message to us for it was written the day before his death. His closest friend, Mr. Karl Mathie, writes, "You no doubt received the editorial written by Doctor Abraham. This was finished Sunday afternoon and was the very last thing he wrote and it was on a subject very near and dear to his heart. He spoke to me several times, as a layman, expressing his hopes for the profession which he loved and adored. I am sure that his work on the Board and in the Association will bear fruit in the years to come, for he always built wisely, patiently and well."

AN OBLIGATION

By Henry W. Abraham.

THE preparation of a physician for his life's work depends on the careful and complicated organizations that have carried him through his education from the kindergarten to his M. D. degree, and these organizations have been evolved through a slow and laborious process, touched with much unselfish labor by many individuals for the benefit of us all. How are we using our patrimony? Do we acknowledge the debt to those who labored so hard and persistently that we might benefit by the fruits of their labors? That is a question that every physician should ask himself. Is he doing all he can to put his loved profession on the highest plane—to approach his ideal? Does he have the feeling that his work has added, not only to the scientific, but also to the moral and humanitarian achievements of the profession? Such a self quizzing occasionally is good for the soul and helps to keep us on the straight and good road laid out in our more youthful and idealistic days.

The men who founded the American Medical Association and those who continued and amplified their good work until it has penetrated every nook and corner of this country of ours are looking to each one of us to carry on.

Is it not possible for us to be more fully imbued with the spirit of their ideals so that we may be more faithful in this labor which has its reward in doing? The fellowships, the exchange of ideas, the leveling of egoisms, the inspirations for better work and a better life that are engendered in these face to face meetings have no substitutes.

Let us then as members of our medical society, which has done so much for us, put some push into our efforts to attend every meeting. And we should remember that attendance at our county, state and national meetings should always come first in our preference for they are the foundation stones of our existence as an organized profession.

The Spirit of the New Year

I wish you joy on this New Year's day, joy of new beginnings, of high expectations, of renewed faith in things to be. May the spirit of the New Year go with you through all its days, and bring you many sweet surprises, many hopes realized, many dreams come true. If disappointments or sorrows or apparent failures come to make you sad, may you not spend God's time in mourning but go on your way rejoicing in His many blessings, counting them over and over, like the little child counting the stars, always beginning but never ending.

—Edwin Osgood Grover.

THE INSPECTION OF HOSPITALS.

IN the present day activities in Public Welfare work there seems to be danger of much duplication of effort and multiplicity of organizations, and it is a subject for serious thought—whether or not we are over-organized.

In the over-lapping of effort much unnecessary and probably conflicting work is apt to be done. This is especially noticeable in the different agencies that have undertaken the inspection of hospitals in our State.

The American Medical Association has a committee on hospitals. The American College of Surgeons has a similar committee and has made an inspection and classified all the hospitals in the state of 100 beds or more. The State Medical Society has a committee on hospitals, and at the last meeting appropriated $300.00 to apply on the expense of an inspection. The Committee of Examining Nurses of the Wisconsin State Board of Medical Examiners has for some years past been making inspections of the hospitals that have training schools, and has a complete record of all the schools in the state.

The question naturally arises: Cannot an inspection of the hospitals and training schools be made by some agency that would be satisfactory to all and thus save the expense and duplication of effort? The inspection of hospitals is very important. Standardization has been a subject for active discussion for some time past, but it cannot become a fact until it is definitely known what hospitals are doing and are able to do. It seems wise to call a conference of these various committees and see if some uniform plan of inspection cannot be agreed upon and some one authorized to make this inspection who will be satisfactory to all.—*J. M. D.*

THE JOURNAL CLINIC

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CLINIC OF L. M. WARFIELD, M. D., MILWAUKEE.

(*Continued from November Journal.*)

CASE 3. A white man, aged 55, laborer, was admitted to the Milwaukee County Hospital November 21, 1919, complaining of cough, loss of appetite and rapid loss of weight, weakness and pain in the upper abdomen. His temperature was 102.4, respirations 32, pulse irregular and intermittent with heart beats 118, pulse beats at the wrist 72. Hasty examination revealed a small patch of dulness, tubular breathing, and crepitant rales in left lung near heart border, a scratchy sound over the body of the heart. The heart was enlarged to left; rate irregular, many premature beats. The liver dulness was increased. There was no edema of legs.

A history was hard to obtain. Out of the many contradictory statements the story was, that about three weeks before admission he was working on the railroad construction gang. He lifted a heavy rail and at once felt something "turn loose" inside of his chest and he had sudden pain extending from his throat to his navel. The pain later was confined beneath his upper breastbone. He has been in bed at home since.

He was never sick in his life before. He has been a hard worker (manual labor), a moderate drinker and a heavy eater especially of meats. He denied venereal infection.

On routine examination next day he seemed in distress, could not lie down flat. He was well nourished but the skin was flabby. There was some cyanosis of lips and finger tips. The pupils were equal and reacted normally. The chest was somewhat barrel shaped. There was slight dulness at the bases posteriorly with coarse rales. There was some precordial bulging. The heart was considerably enlarged to the left and downward. The left border was 17 cm. from m. s. l. in the 5th i. s., the right border was 6.5 cm. from m. s. l. at the 4th rib. The apex was not seen or felt. Sounds

were best heard in the 6th i. s. The sounds were feeble, there were no murmurs present. At the base of the heart no heart sounds could be heard. The heart's action was very irregular, there were many extrasystoles. There was a large pulse deficit, 30-40 beats. The liver and spleen were not palpable. The abdomen was full. The reflexes were normal. The urine was negative, the leucocytes were 7,800.

Rectal examination was negative. The palpable arteries were sclerosed. The W. R. was negative. He had fever for several days. Under hospital care and tincture of digitalis he improved so that by the 28th there was no pulse deficit, the heart had retracted 2.5-3 cm., the sounds could be heard, but feebly. The blood pressure in both arms was the same, 118/76.

Note had been made of substernal dulness with tubular breathing beneath the manubrium. It was now possible to see pulsation in the 3rd i. s. to right of the sternum.

Fluoroscopic examination revealed a flattened heart with a pulsating shadow continuous with it occupying the anterior mediastinum. The greater bulging was to the left of the sternum.

After remaining in hospital four weeks he left Dec. 19, 1919, very much improved. The heart was regular, he had no pain, he had gained in weight.

Our diagnosis was aneurism of the transverse portion of the arch with auricular fibrillation due to strain, non-syphilitic.

DISCUSSION.

This seemed to be a case of aneurism due definitely to strain. Usually aneurisms of the arch of the aorta are due to the weakening of the aorta following a syphilitic aortitis. This affects the media resulting in necrosis of this coat. The strain put upon the thinned aorta causes dilatation which may begin as a small sac or as a diffuse widening of a portion of the arch.

When this patient entered the hospital the irregular dilated heart so obscured the picture that it was not until the heart steadied down that the aneurism was definitely diagnosed. Many cases are similar to this. It is not always possible to diagnose aneurism when the heart is dilated and beating tumultuously. A dilatation of the aorta often occurs under such conditions which disappears as the heart improves. From the prognostic standpoint it is important to find the aneurism. If aneurism is present it renders the prognosis graver than if the condition were only myocardial insufficiency.

CASE 4. An unmarried white man, aged 56 years, a cook, entered hospital July 13, 1920, complaining of asthma. The family history is unimportant. Up to eight years ago he was a heavy drinker of whiskey. He had never had any serious illness in his life. For the past 10 years he has had palpitation of the heart on and off, but had never had shortness of breath or swelling of the feet. Twenty years ago he had a single venereal sore which was burned off with an electric knife by the late Dr. Nicholas Senn. He apparently had had no further treatment. His present illness began with a cold in November, 1919. He coughed a great deal during the day but not much at night. The cough was at first quite productive but about one month ago it became dry. Since January he has had pain under the upper part of the breastbone. This pain is not constant. For the past four weeks he has been very short of breath on slight exertion. He has lost ten pounds in weight since November, 1919. Examination revealed a small, red-faced man with many dilated venules on the cheeks. He has a worried look but does not appear very ill. There is marked scoliosis to the right.

The pulse is full and bounding, rate 88-92, with considerable sclerosis of the arteries. The left radial is distinctly larger than the right. The pupils are equal, oval and react normally. The neck is short and thick. No abnormal pulsations are seen. The chest is asymmetrical, the costal angle is acute. Respiratory excursion is limited equally on the two sides. The tactile fremitus seems equal. The percussion note is impaired over the left side. The breath sounds are somewhat faint over the left side except for an area in the lower axilla where they are almost tubular. There are scattered sonorous rales over the whole chest with crepitant rales in the left back around the spine of the scapula. In the left interscapular region from the 2nd to the 5th thoracic spines the percussion note is flat and the breath sounds are tubular. There is dulness beneath the manubrium continuous with the cardiac dulness. The submanubrial dulness extends further to the left than to the right. The apex beat of the heart is seen and felt at the xiphoid. There is no thrill. There is gallop rhythm best heard in the 6th intercostal space. No murmurs are heard. The abdomen is full; the liver is palpable 5 cm. below the costal border. The reflexes are normal. Blood pressure in the right arm 134/90; in the left arm 120/90.

The urine was negative. The W. R. four plus.

Fluoroscopic examination showed a large pulsating tumor mass above the heart extending from the upper border of the 2nd rib to the lower border of the 4th rib and outwards from the sternum to within 2 cm. of the nipple line. There is marked scoliosis of the spine towards the right. The heart is flattened out by the mass above it.

The patient did not improve. He became very dyspneic, developed Cheyne-Stokes respiration and died on July 19, five days after admission. No autopsy was permitted. The diagnosis was aneurism of the aorta, probably involving for the most part the transverse arch and beginning of the descending aorta.

DISCUSSION.

This was one of the cases which complain of asthma and which are apt to go for a long time

with the true condition undiagnosed. Aneurism is a very common disease. With a history of a prolonged cough and a past history of syphilis one should be on his guard and carefully examine the area of the upper sternum. No intern ever finishes his service with us without missing at least one aneurism. In this case the intern was on the lookout and had found the aneurism before it was confirmed by the fluoroscope. This was not such an easy case because of the marked chest deformity which dislocated the heart in the chest. This evidently was a huge sac for there was dulness over a large area in the back.

These cases of aneurism picked at random among a considerable number show various modes of onset. Occasionally we have had provisional diagnosis of pulmonary tuberculosis. Asthma is a frequent diagnosis. Chronic bronchitis with hoarseness is another diagnosis which is often made.

There are small aneurisms of symptoms which may be exceedingly difficult to find but there should be no difficulty in discovering the large fusiform or sacculated tumor masses which give such definite signs when careful examinations are made.

The following case from consultation practice is so interesting that it seems to warrant a brief note.

Case 5. A man 51 years old was taken ill about six weeks before he was seen in consultation, with pain in the abdomen which rapidly located in his right lower chest. His family history is unimportant.

He had had typhoid fever some years ago, and about 15 years ago, following a heavy meal he felt dizzy, faint, and vomited his meal together with a large amount of blood. He remained in hospital about five days with no further bleeding and left apparently well. He has had no serious stomach trouble since that time. Occasionally he has had attacks of jaundice without pain.

Since January, 1920, he has been gradually losing weight, in all about 20 lbs. up to October 15th, when he was first seen. He had also felt slightly unwell but did not have to give up work. He did not complain at all of his stomach. Six weeks before he was seen he developed this sudden pain with fever. Leucocytosis of 14000 and a slight anemia were found, 80% hemoglobin. Soon after his illness, fluid was found in the right chest. He was tapped and a small amount of clear, sterile, light yellow fluid obtained. In a few days he was again tapped and a small amount of bloody fluid obtained. The condition remained about the same with irregular fever up to 101, down to 99, a pulse between 90 and 100, respirations between 18 and 20, until October 12th when suddenly he had a chill, rapid rise of fever, with a rise in pulse rate and respiration rate. During these five weeks there had been off and on a little jaundice, but there was no record of bile in the urine. The urine was clear and contained a little albumin and a few casts. On the 13th the temperature dropped to 96 and the patient was in shock.

At that time his abdomen was said to be somewhat tense and he complained of pain in the upper abdomen. When seen by me he was lying on his back, somewhat restless, eyes a trifle sunken, the abdomen was slightly distended with a visible swelling in the epigastrium. The right side of the chest showed limited motion, the apex beat was in fifth interspace outside nipple line, there were signs of fluid in the right chest, harsh breath sounds with scattered rales throughout the left. The heart sounds were clear, there was no friction rub. The liver dulness was at the costal margin in the mammillary line and there was a distinct tender mass in the epigastrium, continuous with the liver dulness extending about 5 cm. above the navel, smooth and with a rounded edge. It passed under the left costal border in the left mammillary line. The abdomen was soft with shifting dulness in both flanks. The respirations were rapid and shallow and the pulse bounding, 140 to the minute.

DISCUSSION.

When the temperature chart of this case was first seen and the history of the pain in the chest and fluid were given the presumption was that there was tuberculous sero-fibrinous pleurisy. However, an analysis of the past history with the course of the disease and the physical examination seemed to argue for the following series of events:

There was probably a cancer at the pyloric end of the stomach which had developed in the old ulcer, adhesions had formed around the stomach and there was leakage towards the right side beneath the diaphragm. This had set up a pleurisy irritation. This leakage had gradually extended until it had reached some size with inflammation around it when suddenly it had broken posteriorily into the peritoneal cavity. The infection probably also had involved the liver causing the left lobe to be adherent to the probable abcess and producing either an abcess in the left lobe or a cholangitis. No tuberculosis could be demonstrated anywhere.

The interesting features of this case are the curious onset and the prolonged course of the condition ultimately producing probable abcess, and general peritonitis.

The diagnosis which we made was sub-phrenic abcess with abcess of the liver, effusion into the

pleura, general peritonitis as the result of perforation of a carcinomatous ulcer.

The following day, report was made that the tumor mass in the epigastrium was much increased in size but the patient's condition had materially improved. It was thought best to operate. Operation disclosed fluid in the peritoneal cavity and an enormous left lobe of the liver which was full of carcinomatous nodules, some of which were soft. The stomach was the seat of tremendous induration near the pylorus, which was adherent to all the structures, and undoubtedly was a carcinoma. In the absence of a postmortem examination it is more probable that what we thought was irritation of the pleura from bacterial toxin was caused by secondary growths of cancer on the pleura.

CASE 6. The following case belongs to the group of disturbances of endocrine function and seems worthy of mention here:

A young woman, age 19, student, came in July 12, 1920, complaining that she had not menstruated for several months and that she had grown rather stout and had become easily exhausted and somewhat logy. Her menstrual periods began at the age of 16 and had been regular up to the time of an attack of influenza in October, 1919. She has also had sore throat off and on all winter, but has had no definite tonsillitis. Following the influenza she did not menstruate for three months and gained during that time 25 lbs. Her appetite is good. Bowels are normal. She has no urinary disturbance and no headaches.

On physical examination she was a rather well built but stout girl, firm flesh. The skin was somewhat thick and the complexion sallow. Hemoglobin 100%. Her teeth were in fine condition with a normal looking throat. There was a moderately enlarged, symmetrical thyroid. Chest, heart and abdomen were all negative. Pulse was 72.

On rectal examination the body of uterus was rather large, slightly retroverted, held back in the pelvis. The ovaries appeared small, but not very tender.

DISCUSSION.

This semmed to be very evidently a case of artificial menopause as the result of inflammation of the ovary, due to influenza. The amenorrhea, the rapid increase in weight, the thick skin and the dulling of her mentality suggested also that there had been some loss of thyroid function, probably caused also by influenza.

On the basis of this reasoning and in the absence of any other condition to account for her symptoms she was given thyroid and ovarian extract in rather large doses (the former grs. 2, the latter grs. 5 t. i. d.).

She reported in August at the end of about three weeks of the treatment and had menstruated for the first time since May. She was feeling better and in September when she was last seen she had again menstruated regularly. She had recovered her sprightliness and felt normal in every way. She had lost a few pounds in weight and the circumference of the neck had decreased two cm.

It would appear that this case was very definitely a disturbance of thyroid and ovarian function as the result of an acute infection. It is quite possible that we are seeing these cases from time to time without recognizing the true state of affairs. This illustrates a very pronounced type and shows us the way to rational treatment.

FROM THE CLINIC OF DRS. EVANS, BANNEN, McGARTY AND SKEMP.

A. A. SKEMP.

LA CROSSE.

The following three cases with bizare clinical pictures with the ultimate diagnosis of encephalitis lethargica are presented with some hesitancy, for obscurity seemed their dominant note.

CASE No. 1, S. N. 13078: Girl, age 18. In good health until the middle of August, complaint started with fainting spell and severe headache. These subsided under treatment and the next day and for the following week, patient was well. Then there appeared headaches, feeling of fatigue and drowsiness and severe pain in back of eyes; at times a feeling of increased intracranial pressure. She was referred to the eye specialist, who found no explanation in eyes for symptoms, so she was referred to us for further study. Examination revealed excellent nutrition; slightly clouded sensorium; definite though slight left facial palsy; some paresis of ninth nerve; right eye deviated slightly toward the right. The left abdominal reflex was absent; reflexes were hypoactive. Sensory examination was negative, and spinal fluid revealed a cell count of twenty, Goldcolloid reduction in the middle tubes—none greater than one positive; Wassermann negative.

Clinical Course: T. P. R. normal after the first ten days, the highest temperature was 102. There was a *slight* drop from this point to normal. About the seventh day after the temperature became normal, recovery seemed complete.

CASE No. 2, S. N. 12205: Male, age 55. Entered hospital Feb. 24, 1920. Complained of a feeling of numbness in both arms and hands, tremor, profound weakness and apathy. Onset was three weeks prior to entrance with pain in back of head and neck and transient double vision. Pain subsided under hydrotherapeutics. Physical examination upon entrance revealed

a well nourished and well developed male appearing extremely weak and trembling, had a mask-like expression, and was responsive to questions and answers slowly and indefinitely. There was slight edema of his optic disks. He had left facial palsy, and his reflexes were hyperactive. Spinal fluid globulin test was positive; Wassermann was negative. Goldcolloid was positive in middle dilutions, cell count was 180 per cm., temperature ranged between 98 and 101. He stayed in the hospital for only a few days. The follow-up letter indicated an excellent recovery. The patient's home life was not happy, and after moving into a strange neighborhood, he became despondent. He committed suicide early this fall.

Case No. 3, S. N. 13235: Female, age 13. Influenza in Feb., 1920. June, 1920, developed a convergent strabismus, had some impairment of hearing, pains in right neck and shoulder with partial palsy. Latter part of August incontinence of urine and feces. Patient entered the hospital Sept. 24, 1920. Physical examination revealed a well developed child of thirteen, face immobile, a slight left facial palsy, had a rather vacant far-away stare, reflexes were normal and sensory examination was normal. There was some "wax-like" rigidity of musculature, and arms held flexed on chest. Examination of eye grounds was negative. Spinal fluid under pressure, sixteen cells, globulin test was positive and Wassermann was negative.

Clinical Course: To date without incident, T. P. R. ratio normal. Mother reports that child is improving and that sphincteric control is returning.

DISCUSSION.

The recent work in lethargic encephalitis has forced on the professional mind the conclusion that besides lues and hysteria there is a disease whose symptomatology is so complex that many obscure nervous conditions will have to be separated from its category before a final conclusion in diagnosis can be reached. Nothing, unless it be hysteria or syphilis, could possibly hope to spread its symptomatology field over the tremendous range delineated by Ramsey Hunt, for example, in his recent review in "The International Annual." The proper appreciation of this fact is obtained by only a cursory view of the recognized pathological changes. Petechial hemorrhages in the brain stem, under the third ventrical, under the aqueduct of Sylvius and under the cerebellum, where many of the vital nuclei are assembled in a very limited zone, make possible a wide range of physical manifestations. The differential diagnosis lies for the most part between syphilis, tuberculosis, hysteria and brain tumor, and not until all the data is accumulated, especially the spinal fluid findings and the complete neurological examination, can one hope to formulate an opinion, and then he will do so with a feeling of doubt especially if he has the humility that is practically forced upon him by this new and strange pathogenic agent which is now abroad.

TREATMENT OF PYELITIS IN INFANCY AND CHILDHOOD.

This paper is based on a series of eleven cases in the treatment of which pelvic lavage with silver nitrate was used. Nothing new is claimed by Herman L. Kretschmer and Henry F. Helmholtz, Chicago (*Journal A. M. A.*, Nov. 13, 1920), for this method of treatment, that is, pelvic lavage, nor do they claim that silver nitrate is a specific, nor that it is the only drug that may be or has been used in treating colon bacillus infections of the higher urinary tract. The excellent results obtained in the treatment of B. coli infections in adults by means of silver nitrate injections of the renal pelvis led the authors to attempt to treat a series of patients in children in this way in order to determine whether or not this form of treatment was applicable to these little patients. The youngest patient treated was 7 months of age. The oldest child was 10½ years old. There were no untoward results or reactions following instrumentation and treatment. As a matter of fact, these little patients seem to stand this quite as well as do adults. In nine of the eleven cases, complete cures were obtained; that is, the urine was free of pus and the cultures were sterile. Silver nitrate solution was used in each case. The strength of the solution used was 0.5 per cent. The amount injected varied from 1 c.c. in the infants to 5 c.c. in the older children. The number of injections required to render the urine sterile varied. Three patients required but one injection of the silver nitrate. Five patients required two injections, and one patient required three injections. In ten of the eleven cases, the colon bacillus was found in pure culture. One patient had a paratyphoid bacillus infection. In all of the cases the pyelitis was bilateral. There were no cases in which a colon cystitis was found; that is, in which only a bladder infection was present.

DIABETES MELLITUS AND MYELOGENOUS LEUKEMIA.

To two cases already recorded in the literature, Reginald Fitz, Boston (*Journal A. M. A.*, Nov. 13, 1920), adds a third. In this case the diabetes was mild and responded to dietetic treatment in the usual fashion, and was not appreciably influenced by the roentgen-ray exposure of the splenic region, which had a markedly beneficial effect on the leukemia. The glycosuria cleared up promptly, disappearing after nine days of a fixed low caloric diet, and was accompanied by a rapid fall in the glycemia. Acidosis did not develop. As was characteristic of myelogenous leukemia, the basal metabolic rate was increased, while the white cell count was high and returned to normal as the white cell count diminished. The lowering cell count and basal meta-

bolic rate were accompanied by a diminution in the size of the spleen, although this organ was palpable at the time of the patient's discharge from the hospital.

INSOMNIA FOLLOWING ACUTE EPIDEMIC ENCEPHALITIS IN CHILDREN.

From clinical observations of cases, William M. Happ and Kenneth D. Blackfan, Baltimore (*Journal A. M. A.*, Nov. 13, 1920), are convinced that persistent insomnia is a fairly common sequel of acute epidemic (lethargic) encephalitis in children. They report six cases. The duration of the insomnia has been seven months, five months, four months and six months. The authors consider it as being important that this condition be recognized in order that the children may be regarded as sick children and that the parents may be assured that the insomnia and other peculiarities are not due to wilfulness and disobedience on the part of the child. The patients should be placed in a quiet environment, permitted to sleep when they choose, and not awakened in the morning for meals and bath. They should be given their noon meal and their evening meal, and a third meal should be given at night. They require careful attention at night, and must be prevented from harming themselves. Sedatives, as a rule, are not necessary and are not satisfactory.

ACTINOMYCOSIS TREATED WITH METHYLENE BLUE AND ROENTGEN RAY.

In the case cited by Viggo W. Jensen and C. W. Schery, St. Louis (*Journal A. M. A.*, Nov. 27, 1920), methylene blue was given internally, as well as injected locally into the cheek, the latter in 3 per cent solution. The former was started with 2 grain doses three times a day, later increased to 5 grains, four times daily. This therapy caused nausea, dizziness and weakness at first, but these symptoms soon disappeared. On the twelfth day of treatment the process flared up, involving the orbit and causing complete closure of the eye. It was thought advisable to make use of the roentgen ray, and an erythema dose consisting of an exposure of two minutes to a 6 milliampere, 6 inch spark gap, with the skin target 10 inches distant without a filter except over the upper part, was used. This was followed by a cessation of the acute symptoms, and the local edema decreased. A few sinuses remained in the larger area, and two large abscesses formed just below the eye. These were incised and kept wide open. A second roentgen-ray treatment was applied with similar local and constitutional behavior, but the process receded so rapidly that on the forty-third day all treatment was stopped as all the sinuses, edema and induration had disappeared.

ULCER OF THE BLADDER.

H. A. Fowler, Washington, D. C. (*Journal A. M. A.*, Nov. 27, 1920), has seen three cases of the Hunner type of ulcer of the bladder. Permanent relief was obtained by excision of the ulcer bearing area. The bladder was closed tight, a small cigaret drain was placed in the space of Retzius, and the bladder was drained by a self-retaining catheter. The bladder was irrigated daily with a 1:10,000 silver nitrate solution. The result in both cases has been extremely gratifying and strikingly similar to the results already reported.

SIGNIFICANCE OF ETIOLOGIC FACTORS IN TREATMENT OF PEPTIC ULCER.

Laboratory investigations in 2,168 definitely proved and not "clinically surmised" cases of peptic ulcer have revealed these facts: Of this number, fifty-six patients, 2.6 per cent., had gastric contents containing no free hydrochloric acid; 499 patients, 23 per cent., had free hydrochloric acid values below 30; 890 patients, 41 per cent., had free hydrochloric acid values within the normal range (40 to 50, Töpfer scale) and in 723 patients, 33.4 per cent., the free hydrochloric acid values were greater than the so-called "normal." These investigations show that in no form of gastric disease can the acid values be considered as indicating the causative factor of the disease, or that such acid variations are consequent on that disease; that, in health, the range of acid values in gastric juice is wider than is that of any of the values which formerly were supposed to be indicative of, or consequent on, gastric malfunction. With the purpose of further emphasizing the necessity for considering, chemically, the significance of etiologic factors in the treatment of peptic ulcer, and with the object of demonstrating the need of strict individualization in any ulcer regimen, Frank Smithies, Chicago (*Journal A. M. A.*, June 5, 1920), analyzed 500 gastric ulcers. These ulcers were proved to exist actually by objective data, namely, from surgical, roentgen-ray and pathologic studies. In the group of infectious origin there were 173 cases; arteriosclerotic, 77 cases; visceral hypertonia, 68 cases; chronic anemia (so-called "chlorotic"), 61 cases; syphilitic, 41 cases; visceral hypotonia, 27 cases; postoperative, 27 cases; industrial intoxication, 22 cases; metabolic dysfunction, 18 cases, and traumatic (abdominal injury from blows, falls, etc.; intragastrically, foreign bodies), 8 cases.

HEART DISEASES AS A PUBLIC HEALTH PROBLEM.

Among 5,000,000 men of military age, more than 200,000 were disqualified for service because of heart defects. In one of the large and carefully managed life insurance companies, during the period from 1915 to 1918, the rate of rejection for heart defects was 24.4 per thousand, in spite of the fact that persons with the more obvious forms of heart disease are not likely to apply for insurance. A report of the Department of Health of New York City, covering 250,000 examinations made by school medical inspectors during the year 1918, revealed an incidence of heart defects among school children of 1.6 per cent. An analysis of the mortality statistics of 1,066,711 deaths shows that diseases of the heart were responsible for almost one-eighth of the deaths of all ages and for almost one-fifth of the deaths in persons of

40 years of age and over. Lewis A. Conner, New York (*Journal A. M. A.*, June 5, 1920), states that the movement, which is now gathering headway, for the improvement and co-ordination of existing agencies for the relief of sufferers from heart disease and for arousing interest and co-operation in the problems of prevention has come into existence not so much because of the frequency of cardiac disease as because of the conviction that the present methods of dealing with the problem involve enormous economic waste and immeasurable suffering, much of which is unnecessary and preventable. Conner details the aims, objects and activities of the Association for the Prevention and Relief of Heart Disease of New York. Briefly, its accomplishments up to the present time may be thus outlined: 1. The encouragement of the formation of special cardiac dispensary classes. 2. The increasing of facilities for the care of suitable heart patients in convalescent homes. 3. The arousing of greater interest in the welfare of school children with heart disorders. 4. The accomplishment of a good deal individually by the social service workers in the various dispensary heart classes, in the matter of providing heart cripples with more suitable occupation. A great part of this burden has been taken over by the Employment Bureau for the Handicapped, maintained by the Hospital Social Service Association. Special heart clinics are also in operation in Boston, Chicago and other cities, and the formation of a national organization dedicated to this object would seem to be the next logical step.

TUMORS OF RENAL PELVIS.

The case reported by W. E. Stevens, San Francisco (*Journal A. M. A.*, June 5, 1920), is unique in that the tumor of the renal pelvis was apparently secondary to a papilloma of the bladder; at any rate, no tumor symptoms of renal involvement occurred for more than one and a half years after the appearance and destruction of the bladder papilloma. The patient was a man, aged 70. In 1913, he noticed blood in the urine, and was troubled with frequent urination. Cystoscopy at this time revealed a pedunculated papilloma to the left of the left ureteral orifice. The symptoms disappeared following removal of the tumor with snare and cautery. Nineteen months later, January, 1915, he was in the hospital for two weeks because of severe pain in the right kidney region. His urine contained a trace of albumin, many hyaline, granular and cellular casts and some pus, but no blood cells at the time. Catheterization of the ureters revealed a few pus cells in the urine of the right kidney. The symptoms disappeared following rest in bed. Three years later, April, 1918, he entered the hospital because of blood in the urine. Examination of the urine at this time disclosed many blood cells, a trace of albumin and a few pus cells, but no casts. Cystoscopy revealed an inflamed bladder mucosa and somewhat bloody fluid escaping from the right ureteral orifice. Comparative functional kidney tests were negative. The urine was free from blood at the end of a week, and the patient left the hospital. Six months later he re-entered. Cystoscopy again revealed bloody fluid escaping from the right ureteral orifice. The bladder mucosa was normal. Functional kidney tests gave diminished values on the right side. The wax-tipped catheter showed no evidence of calculi. Pyelography demonstrated a right kidney pelvis somewhat elongated laterally and the ureter entering the pelvis at a right angle. A diagnosis of tumor of the kidney was made, and operation was advised and accepted. A large papilloma the size of a walnut was found when the pelvis was opened. No evidence of ureteral involvement was present.

PREVENTIVE MEDICINE

Edited by
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DIAGNOSIS AND PREVENTION OF DIPHTHERIA.

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When considering any disease, the diagnosis is the most important single consideration. Next to the diagnosis probably is the care and proper treatment of the patient, but certainly the protection of others against the infection is also of very great importance.

Diphtheria, although for many years a reliable means for diagnosis has been recognized, and specific treatment both for its cure and prevention known, remains as an important cause of death, and no small concern to health organizations in the State. The records in the State Board of Health show that up to September this year there have been reported 216 deaths from diphtheria, and that up to October 2338 cases. It is interesting to set this record beside the record of the State Laboratory of Hygiene. During the period covered by the record quoted from the State Board of Health the State Laboratories have diagnosed by cultures only 615 cases of diphtheria, and received 2638 cultures for release from quarantine of those convalescent. This means that the laboratories have been used in less than one-third of the cases as an aid to the diagnosis or as a means of an early diagnosis. Some allowance must be made, however, for the fact that there are a few places in the State where the bacteriological diagnosis of this disease is made without using any of the State Laboratories. These places are few and do not destroy the significance of the wide variation of the number of

reported cases, and the number diagnosed by the cultural method.

There is still another very important thing to be learned from these figures. The records show that there have been 2338 cases reported and that in the State Laboratories there have been received only 2638 cultures for the release of patients. The law requires that before a diphtheria patient may be released from isolation two cultures taken twenty-four hours apart must be negative to diphtheria bacilli. If all of the reported cases had been properly released, and if every one had obtained release from the first two cultures obtained there would have been 4676 release cultures. The laboratory records, as quoted above, show only 2638 such cultures. Part of this difference may be explained by the fact that some releases were secured from other than State Laboratories. This explanation does not satisfy all of the difference; there are many cases being released without the two negative cultures required by law.

In a previous article I pointed out the difficulty of always making a correct clinical diagnosis in suspected diphtheria cases without laboratory aid. There are a number of conditions which very closely resemble diphtheria in their clinical manifestations. Laboratory assistance for the differential diagnosis of these conditions, is essential. Any patient who is allowed to continue sick for several days or a week with an indefinite diagnosis or a diagnosis of tonsilitis without a bacteriological examination as confirmation has been neglected. It is, of course, common knowledge that a patient suffering so long from diphtheria without the use of antitoxin, or with insufficient doses may die in spite of the amount of antitoxin which is used later. The matter of the early use of large doses, 10,000 to 20,000 units, of antitoxin therefore becomes a matter of great importance. The diagnosis is of great importance to indicate to the physician and health officer what measures are necessary to be enforced to protect the public and also to guide the physician in the treatment of his cases. Where early laboratory assistance can not be had, in suspected cases of diphtheria the use of antitoxin should not be delayed for the report of the laboratory. The laboratory result in that case would indicate the necessity of further antitoxin treatment.

So far I have confined this paper to the discussion largely of procedures for the protection of the life of the individual. The other, and most interesting phase of this subject is the methods which may be used for the prevention of the disease.

The proper treatment of the sick individual to prevent the spread of the disease is important. The measures to be used are familiar to everyone. They are quarantine, isolation, culturing and isolating contacts, and proper releasing of patients, contacts, and carriers from quarantine, or isolation.

These measures are always hard to carry out because they involve some expense, and are bound to inconvenience some one. Inconveniences are poorly borne by most of us, but that does not make these procedures any the less important to the family in which the disease occurs, or to the community.

Probably of all the measures which must be employed to prevent this disease none are so annoying and cause as much disturbance as the isolation of a carrier. The carrier we understand as a person who although not sick harbors virulent diphtheria bacilli on the mucous membranes of his nose or throat, and therefore is a spreader of diphtheria bacilli. Examination of the mucous membranes of such an individual may show nothing abnormal. There may be little or no congestion, and the patient may feel in perfect health. It is hard to convince such a person that he is a menace to his community. In fact, most of them are not so mentally constructed that they can see the interests of the other people when their privileges are interfered with. They frequently can be made to see the importance of personal inconvenience in such a case if they have some one to present the matter in a convincing manner. In this regard communities are often unfortunate in that the physicians or a physician in the community does not himself understand the situation, and of course is unable to present the matter in a convincing manner. I purposely have said that the physician does not understand the situation because I do not believe that there are many physicians who think of personal gain when a matter of public concern is up for consideration. It seems unlikely, I know, to many who are familiar with the diphtheria carrier condition to say that there are physicians, and prominent ones too, who do not realize the importance

of the situation, and do not know that a carrier can not be diagnosed from a simple inspection of the mucous membranes. A culture is necessary. That there are good intentioned physicians, who are not complying with health regulations, and who are not cooperating to the fullest extent with health workers for the control of communicable diseases, and particularly this disease because of failure to appreciate the importance of laboratory diagnosis in such cases, comes to my attention frequently.

In addition to the usual procedures mentioned above there are two biological reactions which may be used for the prevention of diphtheria. These reactions are being neglected. I mean the Schick test for the detection of immunes, and non-immunes, and diphtheria toxin-antitoxin inoculation to produce an active immunity against diphtheria.

The neglect of these two procedures is due to several things. Although much has been written about the use of these two methods for the prevention of diphtheria they are not generally known. It is quite inconvenient to use as a routine in private practice because of the number of inspections which must be made to determine a negative or positive Schick reaction, and therefore valuable time lost before passive immunization can be established by the use of antitoxin. In the case of the toxin-antitoxin immunization, the interval after inoculation before immunity is actually established is so long that this method can not be used in an emergency. When a case of diphtheria has occurred in a family and other children in the family have been exposed it is more convenient and cheaper for the family to use a prophylactic dose of antitoxin than to wait until the Schick test is completed. In cases of emergency, that is, after an epidemic of diphtheria has started, there is no time for the use of the immunization with diphtheria toxin-antitoxin mixture because it takes too long for an immunity to be established.

The Schick test, however, can be used in cases of epidemics particularly if a school or a large number of people who are closely associated are involved.

This is well illustrated by an experience which I had in Delavan with an outbreak of diphtheria in the State School for the Deaf and Dumb. A number of cases of diphtheria had occurred in this school. All of the people in the institution were exposed. The problem resolved itself into a matter of locating carriers, and immunes and non-immunes. This required the taking of a nose and throat culture from every person and also the doing of a Schick test on each one. The cultures located the carriers, and they were isolated; the Schick test located the non-immunes, and they were given an immunizing dose of antitoxin. The Schick test showed that there were only about half of the people in the institution who would need the immunizing doses of antitoxin. In three days the whole thing had been completed and not another case of diphtheria occurred. The amount of money saved in antitoxin was not an inconsiderable sum.

The period of life in which one is most susceptible to diphtheria is between the years of 1 and 5. After that there begins to be developed an immunity which increases as adult life is reached. The table below gives the percentage of susceptibles during different periods of life as given by Park and Williams.

	Per cent+Schick
1 to 2 years	50 to 70
2 to 4 "	32 to 60
4 to 6 "	25 to 55
6 to 8 "	21 to 55
8 to 10 "	22 to 55
10 to 12 "	21 to 50
12 to 14 "	17 to 50
14 to 16 "	16 to 50
16 to 18 "	15 to 50
	21 to 50

The Schick test depends on the reaction of non-immunes to an injection of diphtheria toxin, the amount of which is a one-fiftieth minimum lethal dose for a 250 gm. guinea pig. The necessary articles are a 1 c.c. hypodermic syringe graduated into tenths, a very fine needle, sterile normal salt solution, and the diphtheria toxin. The toxin is diluted in the salt solution according to the strength as determined by laboratory tests. The amount of the solution used will depend on the dilution. It will be found convenient to make the dilution so that approximately 0.2 c.c. will be the proper amount, as it makes a good sized bleb.

The injection should be made into the skin and not subcutaneously. This is easily accomplished if a small bit of the skin is held tightly between the thumb and forefinger of one hand, and the barrel of the syringe in the other is held lower

than the needle point. The reaction if positive is shown by an area of inflammation varying in extent from 2 to 5 cm. It is more intense in the center, and endures for about ten days to two weeks, when it gradually disappears, leaving a brown desquamating surface. Those giving such a reaction are susceptible to diphtheria, while those who do not have a natural immunity which is adequate to protect them.

As stated before, the toxin-antitoxin mixture is not to be used in emergencies, but its use will largely prevent emergencies from arising. Diphtheria can be eradicated by the proper use of the Schiek test and the toxin-antitoxin immunization. The procedures are very applicable to large groups. For that reason they can be used with particular value and the least expense and inconvenience among school children. It is not only feasible but highly practical and desirable to make a routine of doing a Schick test on every child when school opens in the fall and immunizing with toxin-antitoxin mixture all those who show a positive Schick test. It seems probable that after immunization with toxin-antitoxin mixture immunity endures throughout life, certainly for many years. The best results are obtained by giving three inoculations of the mixture at intervals of one week. This is done just as the saline typhoid vaccine is administered. The reactions are not severe. In young children it is less severe than in older people. After the inoculation immunity appears in from three to six weeks usually, and in some cases as late as eight to twelve weeks.

The State Laboratory does not distribute either the toxin for the Schick test or the toxin-antitoxin mixture for active immunization. We attempted a few years ago to popularize the use, particularly in schools, of the Schick test, and offered to distribute the toxin free. There was so little response to this offer that we found that we could buy occasionally the small amount of toxin which we need much cheaper than we could make it.

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A STUDY OF CASE-FATALITY RATIOS OF COMMUNICABLE DISEASES IN WISCONSIN COUNTIES.

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Next to early diagnosis prompt reporting of communicable diseases is undoubtedly the most important measure bearing upon the prevention and control of these maladies. An accurate diagnosis alone does little more than suggest to the medical attendant the appropriate line of treatment for the individual who is ill. Obviously the public health machinery whereby the spread of disease is limited or prevented can not be put into motion until the presence of the disease is made known to the proper authorities.

While the usefulness of morbidity registration in communicable disease control is generally conceded, nevertheless, comparatively limited use is made of this essential adjunct. This is particularly true of the State of Wisconsin as a whole and of many localities in the state in particular. A very effective way of determining the degree of completeness with which cases of communicable disease are reported to the local health authorities, is that of studying and comparing the case-fatality ratios, i. e., the relation of the number of reported cases to the reported deaths from these affections. In a previous number of the Wisconsin Medical Journal[1] it was shown that the case-fatality ratios from certain communicable diseases in Wisconsin were considerably higher than those of many other states. At the same time the death rates per 100,000 population were notably lower in Wisconsin than in the very places with which comparisons were made. This discrepancy can be interpreted in one way only, namely, that cases of communicable disease are incompletely reported in Wisconsin. However, case-fatality ratios must not be considered inflexible indicators for there are, as has been pointed out in the article referred to, numerous factors which may influence the findings.

For the purpose of stimulating more complete morbidity registration case-fatality ratios serve the

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[1] "High Fatality Rates of Communicable Diseases in Wisconsin; Evidence of Incomplete Morbidity Registration." The Wisconsin Medical Journal for December, 1919, page 266.

useful function of disclosing palpable negligence. Moreover, these rates serve as an effective means of measuring the extent of the public health conscience, the efficiency of local administrations and the extent as well as the effectiveness of educational measures. It must be remembered that not only physicians but all persons in a community contribute to the formation of the case-fatality ratios. Therefore, the comparison of such ratios from different parts of Wisconsin is of value in indicating where additional pressure is required in order that unnecessary sickness and premature death may be lessened.

In order that the significance of case-fatality ratios may be more readily appreciated, the following brief explanation may prove of interest. A low case-fatality ratio, especially when based upon a large number of reported cases and deaths usually indicates that physicians and others are reporting well. Furthermore, it is evidence of efficiency upon the part of the health officials and energy in applying public health principles. However, when the case-fatality ratio is unusually low one may reasonably suspect that the registration of deaths is incomplete or that the causes of death are inaccurately stated. These conditions do not maintain in Wisconsin. In a few instances it is possible but exceedingly improbable that the low case-fatality ratio may be due to the mildness of the disease or that treatment has been applied with such success that few fatalities have resulted.

The main conclusion to be drawn from a high case-fatality ratio is that the case reports were notably lacking in completeness. Other probabilities in this connection are that the disease either was unusually virulent or that the physicians did not treat the condition with success. These conditions could scarcely maintain year after year in as enlightened a State as Wisconsin.

It is impossible to prepare case-fatality ratios for all of the communicable diseases for the reason that in several instances, notably cerebrospinal meningitis and tuberculosis, the reported deaths exceed the reported cases. It is necessary therefore, to study certain maladies which occur rather generally and are reported with varying degrees of completeness. As diphtheria, measles, scarlet fever and typhoid fever fulfill these conditions satisfactorily they have been utilized in the tables prepared for this article.

In the tables which follow[2] are given the case-fatality ratios for diphtheria, measles, scarlet fever and typhoid fever, both separately and collectively, for each of the 71 counties in Wisconsin. The counties are arranged in order of their standing, those at the head having the lowest case-fatality ratios while those at the foot have the highest ones. It will be noted that Milwaukee, although having approximately one-fifth of the total population of the state, reports approximately one-third of all cases and deaths from the affections studied. It might be supposed that the inclusion of the large number of Milwaukee reports would disturb the state-wide case-fatality ratios. Therefore, in each instance separate state ratios have been calculated with the Milwaukee figures excluded. With the exception of the ratios for measles all of the remaining ratios are slightly but not materially higher than when Milwaukee is included. The tables follow:

TABLE 1.

Diphtheria.

Case-fatality Ratios in Wisconsin Counties during the Five-year Period 1915-1919.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
1	Florence	...	...	....
2	Richland	2	...	....
3	Vernon	53	2	3.8
4	Kewaunee	26	1	3.8
5	Manitowoc	132	6	4.5
6	Monroe	72	4	5.6
7	Forest	32	2	6.2
8	Ozaukee	45	3	6.7
9	Sauk	44	3	6.8
10	Wood	155	12	7.7
11	Green Lake	12	1	8.3
12	Barron	381	33	8.6
13	Washington	46	4	8.7
14	Douglas	289	26	9.0
15	Shawano	22	2	9.1
16	Dane	216	20	9.2
17	La Crosse	413	39	9.5
18	Columbia	42	4	9.5
19	Lafayette	21	2	9.5
20	Jefferson	51	5	9.8
21	Trempealeau	57	6	10.5
22	Lincoln	47	5	10.6
23	Bayfield	65	7	10.7
24	Fond du Lac	102	11	10.8
25	Washburn	37	4	10.8
26	Jackson	27	3	11.1
27	St. Croix	126	14	11.1

[2]The writer is indebted to Miss Hazel Vanderhoef of the State Board of Health for the preparation of these tables.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
28	Brown	134	15	11.2
29	Waukesha	191	22	11.5
30	Price	76	9	11.8
31	Winnebago	133	16	12.0
32	Kenosha	469	57	12.1
33	Adams	48	6	12.5
34	Clark	216	27	12.5
35	Iowa	40	5	12.5
36	Polk	198	25	12.6
37	Rock	222	28	12.6
38	Milwaukee	3829	490	12.8
39	Grant	77	10	13.0
40	Eau Claire	120	16	13.3
41	Ashland	88	12	13.6
42	Iron	57	8	14.0
43	Juneau	57	8	14.0
44	Langlade	49	7	14.3
45	Sawyer	7	1	14.3
46	Waupaca	34	5	14.7
47	Door	20	3	15.0
48	Sheboygan	201	31	15.4
49	Racine	198	31	15.6
50	Chippewa	145	23	15.8
51	Dunn	43	7	16.3
52	Vilas	12	2	16.7
53	Portage	142	25	17.6
54	Marinette	65	12	18.5
55	Dodge	54	10	18.5
56	Outagamie	97	18	18.6
57	Oconto	52	10	19.2
58	Burnett	35	7	20.0
59	Crawford	43	9	20.9
60	Walworth	36	8	22.2
61	Waushara	31	7	22.6
62	Green	13	3	23.1
63	Oneida	30	7	23.3
64	Rusk	94	22	23.4
65	Pepin	28	7	25.0
66	Pierce	23	6	26.0
67	Marathon	164	43	26.2
68	Calumet	14	4	28.5
69	Buffalo	34	10	29.5
70	Marquette	10	4	40.0
71	Taylor	19	14	73.8
	Total	10163	1309	12.9

TABLE 2.

Measles.

Case-fatality Ratios in Wisconsin Counties during the Five-year Period 1915-1919.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
1	Florence	1	...	....
2	Pepin	54	...	....
3	Vernon	77	...	....
4	Jefferson	899	1	.11
5	Rusk	470	1	.21
6	Wood	827	3	.36
7	Door	254	1	.39
8	Lincoln	477	2	.42
9	Green Lake	237	1	.42
10	Portage	684	3	.44
11	Barron	683	3	.44
12	Kenosha	2777	14	.50
13	Walworth	782	4	.51
14	Manitowoc	755	4	.53
15	Iowa	361	2	.55
16	Iron	181	1	.55
17	Dane	2678	15	.56
18	Waukesha	840	6	.71
19	Winnebago	699	5	.71
20	Dodge	557	4	.72
21	Waushara	137	1	.73
22	Pierce	260	2	.77
23	Green	351	3	.85
24	Sauk	339	3	.88
25	Rock	1033	11	1.1
26	Ashland	268	3	1.1
27	Calumet	175	2	1.1
28	Eau Claire	793	9	1.1
29	Trempealeau	761	9	1.2
30	Waupaca	419	5	1.2
31	Milwaukee	18494	232	1.2
32	Marathon	1163	15	1.3
33	Bayfield	297	4	1.3
34	Dunn	458	6	1.3
35	Marinette	530	7	1.3
36	Oneida	150	2	1.3
37	Polk	301	4	1.3
38	Washburn	228	3	1.3
39	Marquette	73	1	1.4
40	Racine	1387	20	1.4
41	Richland	347	5	1.4
42	Chippewa	676	10	1.5
43	Clark	331	5	1.5
44	Columbia	596	9	1.5
45	Grant	790	13	1.6
46	Langlade	249	4	1.6
47	Price	123	2	1.6
48	Jackson	113	2	1.8
49	Juneau	167	3	1.8
50	St. Croix	208	4	1.9
51	Burnett	254	5	1.9
52	Crawford	100	2	2.0
53	Oconto	228	5	2.2
54	Washington	91	2	2.2
55	Monroe	675	17	2.5
56	Kewaunee	38	1	2.6
57	Douglas	559	15	2.7
58	Lafayette	292	8	2.7
59	Sheboygan	330	9	2.7
60	Sawyer	107	3	2.8
61	Shawano	249	7	2.8
62	Forest	241	7	2.9
63	Brown	447	15	3.4
64	Adams	165	6	3.6
65	La Crosse	188	8	4.2
66	Fond du Lac	211	10	4.7
67	Taylor	113	6	5.3

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
68	Outagamie	157	9	5.7
69	Ozaukee	17	1	5.9
70	Buffalo	16	2	12.5
71	Vilas	4	1	25.0
	Total	50000	608	1.2

TABLE 3.

Scarlet Fever.

Case-fatality Ratios in Wisconsin Counties during the Five-year Period 1915-1919.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
1	Vilas	9	...	....
2	Calumet	66	...	....
3	Dunn	142	1	.7
4	Lincoln	126	1	.79
5	Sauk	112	1	.89
6	Price	103	1	.97
7	Eau Claire	201	2	.99
8	Waushara	80	1	1.2
9	Washington	78	1	1.3
10	Clark	158	2	1.3
11	Dane	897	13	1.5
12	Winnebago	336	5	1.5
13	Bayfield	56	1	1.8
14	Waukesha	217	4	1.8
15	Douglas	426	8	1.9
16	Walworth	192	4	2.1
17	Adams	47	1	2.1
18	Jefferson	129	3	2.3
19	La Crosse	167	4	2.4
20	Pepin	41	1	2.4
21	Rusk	82	2	2.4
22	Wood	402	10	2.5
23	Fond du Lac	512	14	2.7
24	Washburn	74	2	2.7
25	Taylor	105	3	2.8
26	Kenosha	554	16	2.9
27	Polk	104	3	2.9
28	Rock	419	12	2.9
29	Columbia	237	7	2.9
30	Lafayette	137	4	2.9
31	Buffalo	33	1	3.0
32	Milwaukee	8252	249	3.0
33	Grant	188	6	3.2
34	Waupaca	313	11	3.5
35	Marinette	244	10	4.1
36	Crawford	48	2	4.2
37	Monroe	237	10	4.2
38	Portage	283	12	4.2
39	Barron	188	8	4.3
40	Iowa	117	5	4.3
41	Racine	555	24	4.3
42	Chippewa	223	10	4.5
43	St. Croix	110	5	4.5
44	Burnett	129	6	4.6
45	Dodge	253	12	4.7
46	Oconto	277	14	5.1
47	Trempealeau	98	5	5.1
48	Iron	39	2	5.1
49	Manitowoc	368	19	5.2
50	Oneida	58	3	5.2
51	Vernon	95	5	5.3
52	Shawano	202	11	5.4
53	Juneau	143	8	5.6
54	Langlade	270	15	5.6
55	Ashland	107	6	5.6
56	Forest	107	6	5.6
57	Richland	122	8	6.5
58	Florence	29	2	6.9
59	Marquette	28	2	7.1
60	Jackson	26	2	7.7
61	Green	90	7	7.8
62	Green Lake	90	7	7.8
63	Marathon	393	32	8.1
64	Outagamie	294	25	8.5
65	Brown	226	22	9.7
66	Ozaukee	133	16	12.0
67	Door	117	15	12.8
68	Sheboygan	419	55	13.1
69	Sawyer	12	2	16.7
70	Pieree	37	7	18.9
71	Kewaunee	11	3	27.3
	Total	21155	797	3.8

TABLE 4.

Typhoid Fever.

Case-fatality Ratios in Wisconsin Counties during the Five-year Period 1915-1919.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
1	Florence	...	...	....
2	Adams	3	...	....
3	Jackson	3	...	....
4	Ozaukee	3	...	....
5	Washburn	6	...	....
6	Vernon	8	...	....
7	Forest	16	...	....
8	Iron	19	1	5.3
9	Marinette	50	5	10.0
10	Eau Claire	61	7	11.5
11	Bayfield	43	5	11.6
12	Manitowoc	59	7	11.9
13	Marquette	15	2	13.3
14	Oconto	30	4	13.3
15	Pepin	30	4	13.3
16	Calumet	7	1	14.3
17	Iowa	7	1	14.3
18	Kewaunee	42	6	14.3
19	Fond du Lac	48	7	14.6
20	Trempealeau	19	3	15.8
21	Dunn	12	2	16.7
22	St. Croix	6	1	16.7
23	Marathon	69	12	17.4
24	Richland	11	2	18.2
25	Winnebago	76	14	18.4
26	La Crosse	32	6	18.7
27	Door	84	16	19.0
28	Sheboygan	146	29	19.8
29	Washington	19	4	21.0

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
30	Kenosha	67	15	22.4
31	Jefferson	13	3	23.0
32	Price	13	3	23.0
33	Milwaukee	858	209	24.4
34	Green Lake	12	3	25.0
35	Taylor	11	3	27.3
36	Green	14	4	28.6
37	Wood	59	17	28.8
38	Rusk	24	7	29.2
39	Barron	27	8	29.6
40	Walworth	10	3	30.0
41	Lafayette	22	7	31.8
42	Outagamie	21	7	33.3
43	Buffalo	6	2	33.4
44	Monroe	6	2	33.4
45	Douglas	92	32	34.8
46	Portage	14	5	35.7
47	Dane	27	10	37.0
48	Brown	35	13	37.2
49	Grant	8	3	37.5
50	Sauk	8	3	37.5
51	Columbia	15	6	40.0
52	Clark	19	8	42.0
53	Crawford	9	4	44.5
54	Juneau	9	4	44.5
55	Oneida	9	4	44.5
56	Rock	29	13	44.8
57	Burnett	4	2	50.0
58	Dodge	10	5	50.0
59	Vilas	2	1	50.0
60	Waupaca	16	10	62.5
61	Chippewa	10	7	70.0
62	Lincoln	10	7	70.0
63	Polk	10	7	70.0
64	Langlade	4	3	75.0
65	Waushara	4	3	75.0
66	Shawano	7	6	85.8
67	Pierce	4	4	100.0
68	Racine	32	32	100.0
69	Sawyer	1	1	100.0
70	Waukesha	7	7	100.0
71	Ashland	16	17	106.0
	Total	2498	649	26.0

TABLE 5.

Case-fatality Ratios of Wisconsin Counties during the Five-year Period 1915-1919. Based on Total Reported Cases and Deaths from Diphtheria, Measles, Scarlet Fever, and Typhoid Fever.

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
1	Jefferson	1092	12	1.1
2	Dane	3800	58	1.5
3	Walworth	1020	19	1.9
4	Sauk	503	10	2.0
5	Lincoln	660	15	2.3
6	Dunn	665	16	2.4
7	Trempealeau	935	23	2.5
8	Iowa	525	13	2.5
9	Washburn	345	9	2.6
10	Kenosha	3867	102	2.6
11	Calumet	262	7	2.7
12	Manitowoc	1314	36	2.7
13	Eau Claire	1175	34	2.9
14	Wood	1443	42	2.9
15	Columbia	890	26	2.9
16	Vernon	233	7	3.0
17	Grant	1063	32	3.0
18	Richland	482	15	3.1
19	Waukesha	1255	39	3.1
20	Winnebago	1244	40	3.2
21	Monroe	990	33	3.3
22	Green Lake	351	12	3.4
23	Dodge	874	31	3.5
24	Green	468	17	3.6
25	Bayfield	461	17	3.7
26	Milwaukee	31433	1180	3.8
27	Rock	1703	64	3.8
28	Forest	396	15	3.8
29	Marinette	889	34	3.8
30	Waupaca	782	31	3.9
31	Portage	1123	45	4.0
32	Barron	1279	52	4.1
33	Iron	296	12	4.1
34	Jackson	169	7	4.1
35	Lafayette	472	21	4.5
36	Washington	234	11	4.7
37	Burnett	422	20	4.7
38	Chippewa	1054	50	4.8
39	Price	315	15	4.8
40	Rusk	670	32	4.8
41	Waushara	252	12	4.8
42	Fond du Lac	873	42	4.8
43	Racine	2172	107	4.9
44	Adams	263	13	4.9
45	Langlade	572	29	5.1
46	Florence	38	2	5.3
47	St. Croix	450	24	5.3
48	Shawano	480	26	5.4
49	Sawyer	127	7	5.5
50	Oconto	587	33	5.6
51	Marathon	1789	102	5.7
52	Clark	724	42	5.8
53	Pierce	324	19	5.9
54	Douglas	1366	81	5.9
55	Juneau	376	23	6.1
56	Polk	613	39	6.4
57	Oneida	247	16	6.5
58	La Crosse	800	57	7.1
59	Marquette	126	9	7.1
60	Door	475	35	7.4
61	Brown	842	65	7.7
62	Pepin	153	12	7.9
63	Ashland	479	38	7.9
64	Crawford	200	17	8.5
65	Kewaunee	117	11	9.4
66	Ozaukee	198	20	10.1
67	Outagamie	569	59	10.3
68	Taylor	248	26	10.5
69	Sheboygan	1096	124	11.3

Rank	Counties	Cases	Deaths	Case-Fatality Ratios
70	Vilas	27	4	14.8
71	Buffalo	89	15	16.9
	Total	83816	3363	4.01

TABLE 6.

Summary of Case-fatality Ratios of Diphtheria, Measles, Scarlet Fever and Typhoid Fever, (Separately and Combined) for the Entire State of Wisconsin, for the State of Wisconsin with the City of Milwaukee Excluded and for the City of Milwaukee Alone, for the Five-year Period, 1915-1919.

Diseases	Case-fatality Ratios		
	Entire State	State Exclusive of Milwaukee	Milwaukee Alone
Diphtheria	12.9	13.0	12.8
Measles	1.2	1.1	1.2
Scarlet Fever	3.8	4.2	3.0
Typhoid Fever	26.0	26.8	24.4
The Above Diseases Combined	4.0	4.1	3.8

These tables, while based upon all data available and therefore accurate, must be considered suggestive only. Counties having case-fatality ratios lower than those for the entire state may be regarded as receiving better morbidity reports of the communicable disease in question. When the country ratios are higher than the state-wide ratios incomplete case reporting is plainly indicated because wide variations such as have already been indicated do not ordinarily prevail within the confines of the same state. However, many of the counties in which the case-fatality ratios are lower than the general ratios have reason for limited pride in the achievement, for when these apparently low figures are compared with those of neighboring states it will be found that many counties suffer correspondingly.

The information set forth in these tables is commended to the particular attention of the county medical societies in the state and specifically to the individual members of these organizations. It is fully realized that the blame for incomplete morbidity registration can not be laid entirely to the medical profession. However, medical men undoubtedly see a much larger proportion of communicable diseases than they report and therefore can be instrumental, if they will, not only in rendering prompt and complete reports but also in getting into operation the forces which will aid in limiting the ravages of these maladies.[3]

Similarly, the heads of hospitals, nurses, school teachers and particularly the responsible heads of families must likewise do their full duty in this respect. Without concerted action the prevalence of communicable diseases can not be sensibly diminished and the barometer of their presence, the case-fatality ratios, will continue to remain unreasonably high.

THE PHYSICIAN'S RESPONSIBILITY: AN IMPORTANT DECISION ON PROFESSIONAL SECRECY.

The recent decision of the Supreme Court of Nebraska, abstracted in the Medicolegal department of The Journal last week, is of importance and interest to practicing physicians, and especially to health officers. It establishes for the first time, by the decision of a court of last resort, the exact relations that exist between a physician and his patients, on the one hand, and a physician and the public, on the other. The details of the case, as shown by the evidence, are interesting and unusual. The plaintiff, while stopping at a small hotel, consulted a local physician, the defendant, regarding some sores that had appeared on his body. After an examination, the physician told the plaintiff—his patient—that he believed the disease to be syphilis, but that it was impossible to make a positive diagnosis without a Wassermann test, for which he had no equipment. The defendant physician was also the physician of the hotel, and the family medical adviser of the owner. He told the plaintiff that there was danger of communicating the disease to others in the hotel and asked him to leave the hotel the next day, which the plaintiff promised to do. On the following day, the physician, while making a professional call on the manager of the hotel, who was ill, learned that the plaintiff was still there. He thereupon warned the manager's wife that he thought the plaintiff was afflicted with a contagious disease, and advised her to use special precautions to avoid infection. As a result of his warning, the plaintiff was forced to leave the hotel. He consulted a physician in another town, who, after a negative Wassermann test had been made, was unable to say whether the plaintiff had syphilis or not. The plaintiff, thereupon, brought suit against the physician, claiming damages on the ground that he had been injured by a disclosure of a confidential communication, which disclosure constituted a breach of professional confidence on the part of the physician. There was no dispute regarding the facts; the question before the Supreme Court was whether the statement of the defendant physician that the plaintiff was suffering from a contagious disease constituted proper grounds for damages.

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[3]A more extended discussion of this subject will be found in The Wisconsin Medical Journal for January, 1920, "The Need for Morbidity Registration in Wisconsin," page 333, and also in the same periodical for February, 1920, "Health by Mail, A New System of Communicable Disease Control," page 382.

The court pointed out that, under the common law, no privilege exists between physicians and patients, and that this ruling prevailed except when changed by statute. This means, in everyday language, that, contrary to the opinion generally held by both physicians and the public, communications made to physicians are not under the obligation of secrecy but have the same legal status as communications made to any one else, unless the state legislature has passed a special law on this subject. In Nebraska there is no special law making communications to physicians privileged. The legislature in 1913 passed a law providing that a physician should not be allowed to disclose on the witness stand any confidential communication made to him in his professional capacity. The object of this statute is obvious. It is to prevent confidential communications being used as evidence against the person making them or, in other words, to protect an individual from being forced to testify against himself. But in the present case the physician was not on the witness stand, so that this statute did not apply. Another statute—the medical practice act—in defining unprofessional and dishonorable conduct for which a physician's license may be revoked, includes among the acts of such conduct "betrayal of a professional secret to the detriment of a patient." Is such a communication as the defendant made in this case "unprofessional and dishonorable conduct"? After an exhaustive discussion, the court decides that it is not.

This is the first time that such a question has come before any American court of final appeal; hence the language of the court is important and worthy of repetition. The court says that information given to a physician by his patient, though confidential, is subject to the understanding that if the patient's disease is found to be of so highly contagious or infectious a nature that it may be transmitted to others unless the dangers of transmission are disclosed, then the physician is warranted in making so much of a disclosure to such persons as is reasonable and necessary to prevent the spread of the disease. Putting this ruling in ordinary language, it means that the court recognizes the fact that while a physician owes a duty to a patient to respect his privacy, he owes a duty to the public to protect it against infectious diseases, and that of these two duties the duty to the public is the greater. Yet the court recognizes that this duty to the public must be properly safeguarded. It furthermore says that when a physician makes a disclosure, he must be sure that it is necessary to prevent the spread of the disease, and must act in good faith with reasonable grounds for his disclosures and without personal malice toward the infected person. Having observed these precautions, he cannot be held liable, even though he is mistaken in his diagnosis and has stated that his patient is afflicted with a disease that he does not have. In other words, the question at issue is not the accuracy of the physician's diagnosis. The law does not require the physician to be infallible; he is only required to possess the average skill and ability of other physicians in similar circumstances and to exercise due care and skill. After having made a diagnosis to the best of his ability, if he believes honestly and without malice that the patient is a danger to another individual or to the community, he is justified in communicating so much of his belief as may be necessary to protect others from contracting the disease. The decision recognizes the fact that while a physician owes a duty to his patient, he also owes a duty to his other patients and to the public.—*Jour. A. M. A.*, Oct. 30, 1920.

TREATMENT OF OBSTINATE OCCIPITOPOSTERIOR POSITIONS.

When the head is high and floating, Joseph B. De Lee, Chicago (Journal A. M. A., July 17, 1920), says interference is not necessary; but a careful search should be made for any condition that may demand treatment for its own sake. Rupture of the membranes should be prevented, if possible, because labor is more often retarded than hastened by it. The woman should lie on the side to which the occiput points; this is supposed to favor flexion, engagement and rotation. Morphin and scopolamin are used in the first stage to prevent exhaustion of the mother and child, but it is not wise to let the labor drag on too much. By means of a colpeurynter the dilatation of the cervix may be completed and the case thus prepared for interference if required. After complete dilatation of the cervix, De Lee usually waits an hour or two to see whether or not the head will engage. If it does not, the membranes are punctured—the patient being on her side, to prevent prolapse of the cord. If the head does not engage very soon, under deep anaesthesia the whole hand is passed into the uterus, pushing the head up and out of the pelvis if necessary. That hand is selected which will have its palm directed toward the face of the infant. The posterior shoulder of the child is sought and with the tips of the fingers is swung around to the front, past the promontory of the sacrum. The head, fitting into the palm of the hand, goes with the trunk. When the inside hand is leading the occiput into the pelvis in its new position, the outside hand forces the head down by pressure on the occiput, which is now to be felt over the pubic ramus. It may be advisable to draw the head down deep into the pelvis with forceps, await from four to six labor pains, remove the forceps, and leave the case to Nature or to follow a later indication. The latter plan is especially successful in primiparas, because the moulding of the head and the softening of the tissues produced by a few hours' labor and the progress of the head toward the outlet immensely facilitates the subsequent delivery. De Lee warns against the use of forceps in these high head cases. If descent, rotation and extraction are forcibly effected by forceps, the child is always injured, often killed, and the mother likewise maltreated. This is one of the commonest causes of stillbirth and puerperal infection. After the head is engaged, the case is simplified. De Lee describes his methods in detail.

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Richland	R. H. Delap, Richland Center	G. Benson, Richland Center.
Rock	M. G. Spawn, Beloit	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	A. J. Gates, Tigerton	W. H. Cantwell, Shawano.
Sheboygan	T. Gunther, Sheboygan	Harry Heiden, Sheboygan.
St. Croix	W. H. Banks, Hudson	O. H. Epley, New Richmond.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	C. F. Peterson, Independence.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	F. W. Aplin, Waukesha	S. B. Ackley, Oconomowoc.
Waupaca	E. W. Jones, Weyauwega	H. A. Jefferson, Clintonville.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

KENOSHA COUNTY

The Kenosha County Medical Society held its November meeting at the Elks' Club, Kenosha, Wednesday evening, November 10, eighteen being in attendance. The society unanimously passed resolutions endorsing the stand taken by the State Medical Society at its La Crosse meeting, which provided for enforcement of the regulations in regard to indiscriminate prescribing of alcoholic stimulants by some physicians. The speaker for the evening was Dr. H. B. Halbert of Chicago, who spoke on "High Blood Pressure and Its Treatment." The customary social hour and luncheon followed the business session and lecture.

H. M. Ripley, M. D., *Secretary.*

MANITOWOC COUNTY

The Sisters of the Holy Family Hospital at Manitowoc gave a banquet to the members of the County Medical Society, Thursday evening, November 18. The following officers were elected for the coming year: Dr. A. M. Farrell, Two Rivers, president; Dr. Eugene Gates, Two Rivers, vice-president; Dr. V. V. Kellner, Maribel, secretary-treasurer; Dr. J. R. Currens, Two Rivers, censor; Dr. E. G. Festerling, Reedsville, delegate; and Dr. H. W. Aldridge, Manitowoc, alternate.

E. C. Cary, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Society was held at the Hotel Pfister, Friday evening, November 12, at 8:30 o'clock. The following program was presented: "Diathermy in the Treatment of Tuberculosis of the Bones—Report of a Case," by Dr. John Moeller, and "Injuries of the Maxillary Bones and Their Correction," by Dr. G. V. I. Brown.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

A meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot Building, Milwaukee, Tuesday evening, November 9. After the presentation of several interesting clinical cases, the following papers were read: "Cholesterinemia and the Wassermann Reaction," Dr. Edwin Henes, Jr.; and "Fractional Gastric Analysis," by Dr. Arthur J. Patek.

At the regular meeting of the Milwaukee Medical Society held Tuesday evening, November 23, discussions of several phases of tuberculosis, the traveling clinics and early diagnosis, were led by Drs. Oscar Lotz, A. A. Pleyte and George Ernst. Dr. Ernst urged that campaigns of education against tuberculosis be carried on in the State and that persons believed to be suffering from this disease consult physicians immediately before the disease has taken firm hold.

Oscar Lotz, M. D., *Secretary.*

ROCK COUNTY

A most successful meeting of the Rock County Medical Society was held at the County Poor Farm at Janesville, October 26, attended by about one hundred physicians and their wives, when the society was the guest of Superintendent Cullen at a turkey banquet. The members of the society state they can heartily recommend a meeting at the county poor farm to every county society, provided they have a superintendent who will show them the hospitality that Superintendent Cullen has always shown them. At the business session, the resolutions adopted by the State Society at its La Crosse meeting, in condemning the indiscriminate prescribing of alcoholic stimulants by some physicians, were unanimously endorsed. Dr. Charles Mix of Chicago read an interesting paper on "Sleeping Sickness."

E. B. Brown, M. D., *Secretary.*

WEST WISCONSIN DISTRICT

More than one hundred physicians, representatives of thirteen counties, attended the 17th annual convention of the West Wisconsin District Medical Association, held in Eau Claire, November 10. The morning was taken up with medical and surgical clinics at the two hospitals. In the afternoon, papers were read by Drs. A. S. Fleug, Minneapolis; Karl Doege, Marshfield; C. W. Hensel, St. Paul; H. B. Sweetser, Minneapolis; T. L. Szlapka, Rochester; H. M. Brown, Milwaukee; E. L. Mason and A. L. Payne, of Eau Claire. A banquet was served in the evening at the Elks' Club, which had been converted into a veritable Chinatown, and Chinese costumes were furnished each guest. A long list of vaudeville attractions had been secured for the evening's entertainment and the officers and arrangement committee were highly praised by the visiting physicians for the splendid work done in preparation for the meeting.

ASSOCIATION NEWS

A CORRECTION.

Dr. William B. Peck, Managing Director of the Tri-State District Medical Society, writes, under date of November second, an objection to the part of the published minutes of the last House of Delegates which refers to "a suggestion of the Tri-state District Medical Association that a joint meeting be held in 1921 of the two societies."

This was very possibly an error. Last winter, a meeting of the officers of the two associations was held in Milwaukee to try and devise ways and means by which the dates of meeting of the two associations would not conflict, the State Medical Society of Wisconsin taking the position that it could not offer full co-operation with the newer association unless such association arranged its dates so their meeting would not be held within a few weeks of the time the older organization has held its meetings for many years.

As a possible way out of the difficulty, the possibility of holding a joint meeting the year in which the Tri-State District Society meets in Wisconsin was consid-

ered. The Managing Director of that organization objects to the publication of this suggestion as coming from the officers of his society and this notice is a correction of any inference to that effect which may have been made before the House of Delegates. The suggestion was probably made by the Secretary of the State Medical Society of Wisconsin, as he has tried in every way to solve the problem and work out some scheme whereby the work of the two organizations would not conflict in the matter of competing for attendance.

Following are the officers elected by the Tri-State District Medical Society for the coming year:

President-Elect—Dr. John E. O'Keefe, Waterloo, Ia.

Honorary President of Clinics—Dr. George W. Crile, Cleveland, Ohio.

Honorary President—Dr. James R. Guthrie, Dubuque, Iowa.

President—Dr. George V. I. Brown, Milwaukee, Wis.

Vice-President, Wisconsin—Dr. Joseph S. Evans, Madison.

Vice-President, Iowa—Dr. Walter L. Bierring, Des Moines.

Vice-President, Illinois—Dr. Erwin P. Sloan, Bloomington.

Managing Director—Dr. William B. Peck, Freeport, Ill.

Secretary-Treasurer—Dr. Domer G. Smith, Freeport, Ill.

BOARD OF DIRECTORS.

Dr. John Van Reed Lyman, Eau Claire, Wisconsin.
Dr. Wilson Cunningham, Platteville, Wisconsin.
Dr. Arthur G. Sullivan, Madison, Wisconsin.
Dr. Donald McCrae, Jr., Council Bluffs, Iowa.
Dr. John F. Herrick, Ottumwa, Iowa.
Dr. Henry G. Langworthy, Dubuque, Iowa.
Dr. Edward Fiegenbaum, Edwardsville, Illinois.
Dr. Clifford U. Collins, Peoria, Illinois.
Dr. James McDonald, Aurora, Illinois.

PROGRAM COMMITTEE.

Dr. Horace M. Brown, Milwaukee, Wisconsin.
Dr. Don Deal, Springfield, Illinois.
Dr. Tom B. Throckmorton, Des Moines, Iowa.

NEWS ITEMS AND PERSONALS

Dr. P. J. Majerus of Sullivan has moved to Ft. Atkinson and has purchased a large brick residence which he will convert into a hospital.

Langlade County held a Better School week the third week in November, and many Langlade County physicians and dentists gave talks on hygiene and sanitation at the programs held in the various schools. Dr. L. A. Spencer of Wausau, district health officer, spent the entire week in the county, lecturing at the larger schools.

Dr. P. R. Minahan, who has been engaged in the practice of medicine at Fond du Lac for the past eight years, has removed to Green Bay where he has become associated with Drs. J. R. and R. E. Minahan and George King. His offices at Fond du Lac have been taken over by Drs. J. J. and H. R. Sharpe.

Dr. Charles E. Ide, medical superintendent of the Whipple Barracks, Prescott, Arizona, has been appointed superintendent of the Muirdale Sanatorium, Wauwatosa, by the county board of administration. Dr. Ide, who formerly lived in Milwaukee, headed the list of eligibles submitted to the board and was one of the twenty-three physicians from all parts of the country who took the examination held by the civil service commission recently.

Need for enlargement of the state camp for convalescents at Tomahawk Lake and the value of the traveling chest clinic and of the sanatorium consultation service were emphasized at the convention of the Wisconsin Anti-Tuberculosis Association held in Milwaukee in November. An appeal for additional room at the Tomahawk camp was made by F. A. Reich, superintendent, as only twenty-one patients can be accommodated there at one time at present. The association elected the following officers: H. H. Jacobs, Milwaukee, president; R. L. Cooley, Milwaukee, Mrs. Ben Hooper, Oshkosh, vice-presidents; Dr. J. G. Taylor, Milwaukee, recording secretary; Howard Green, Milwaukee, treasurer.

Dr. E. C. Neumann, who has practiced at Berlin for a number of years, has removed to Kenosha where he will take up practice.

Fire destroyed the second and third stories of the municipal hospital at Menomonie the afternoon of November 17, with an estimated loss of $20,000. The patients are being cared for in private homes in Menomonie.

Dr. D. Stanley Van Hecke has recently returned to Milwaukee, via the Philippines, after several months' service in Siberia in the U. S. medical corps.

G. Fuhrken, 581 Jackson Street, Milwaukee, was arraigned in District Court, November 21, on a warrant sworn out by Frank Wernisch of the city purchasing department, on a charge of practicing medicine without a license. Samples of his medicines, which he claimed cure more than thirty diseases, were submitted to a test by the city chemist, which showed the principal ingredients to be sugar and milk.

Dr. W. J. McKillip, of the contagious disease division of the city health department of Milwaukee, spent two weeks in Washington where he attended the venereal disease institute held under the auspices of the U. S. Public Health Service. Dr. G. C. Ruhland, commissioner of health of Milwaukee, attended the All-American conference on venereal diseases which followed the institute.

Dr. Chas. A. Yates who has practiced in Bangor for the past twenty years, has removed to Hillsboro and become associated with Dr. P. H. Hausberry.

The consolidation of the Blue Mound and Muirdale sanatoriums, Wauwatosa, has been recommended by the county board. It was voted to make the transfer on the payment of $40,000 by the county to the city, though the value of the Blue Mound institution is admittedly

in excess of this amount, but as the bulk of the county's taxes is paid by the city, it is believed the saving to be made by the transfer will more than reimburse the taxpayers. The saving in the operation of the Blue Mound sanatorium under the new plan will be more than $45,000, it is estimated. For all patients there, the county will receive state aid of seven dollars a week, which the city could not get. The consolidation will also result in considerable saving in salaries, as both institutions will be under the same administrative head.

Dr. A. M. Christofferson, who for a number of years has been a member of the Colby medical association, has sold his interests to Drs. H. H. Christofferson and A. L. Schemmer and removed to Waupaca, where he will be affiliated with the new hospital being erected there.

Miss Iris Brunner of Michigan has been appointed as supervising nurse at the Hilbert Hospital, conducted by Dr. Chas. Lawler.

Dr. John Harkins of Forest Junction, who was operated upon recently for appendicitis, has returned to his home.

Work has been begun on the new building which, when completed, will be used as the home for the nurses and the laundry for the St. Nicholas Hospital, Sheboygan. Excavations have been made and the walls completed to the first floor.

Dr. J. W. Pinch, who about fifteen years ago removed from Gillett to Lac du Flambeau where he has been physician for a large lumber concern, has returned to Gillett to take up practice.

Dr. John Scantleton of Sparta has taken into partnership, Dr. C. S. Phalen of Harvard, Illinois. The two physicians are old friends, having been classmates at the Northwestern Medical School at Chicago.

Dr. H. C. Erickson, who has practiced a number of years at Stanley, has removed to Marinette to take up practice.

Milwaukee's proposed new children's hospital, to cost approximately $500,000, will be erected early next year at Seventeenth Street and Grand Avenue, it was said by Mrs. Jackson B. Kemper, president of the Milwaukee Children's Hospital, and Mrs. Guido C. Vogel, chairman of the building committee. Architects are working on plans for a building to accommodate 100 beds and a nurses' school, with a power plant in connection. The $500,000 was raised by subscription last May.

A training school for nurses, affiliated with the St. Mary's Hospital, will be opened in Superior by the Wisconsin conference, Catholic Hospital Association, as soon as final arrangements for housing and instruction can be made. A three-year course, leading to a graduated nurse's diploma, will be offered.

The directors of the Madison General Hospital at a meeting voted unanimously to add 5,160 square feet of floor space to the hospital for the general betterment of the institution. On the fourth floor the unfinished portion is to be raised another story equal to the rest of the building. This is to be devoted to a modern pathological laboratory with a full-time technician; a complete and modern X-ray laboratory and two four-room wards for recovery patients. That part between the old and new building is to be raised two stories. The third floor for a complete maternity surgical department; the fourth floor for enlarging the general and special surgical department.

The Medical Protective Company of Fort Wayne, Ind., announces that it is now providing added indemnity for the protection of the physicians where desired. The company has just completed statistics on the amount of money involved in judgments that have been rendered in the past few years and finds that the number of judgments in excess of $5,000 in 1915 was a little over 1 per cent, while in 1920 the ratio of judgments in excess of of $5,000 was a trifle less than 54 per cent. This indicates that courts and juries are now assessing higher damages against physicians found guilty of malpractice than they did in 1915. The Medical Protective Company has met this situation by preparing an added indemnity clause increasing the amounts available for the payment of judgments to $10,000 in a single case and $30,000 in any number of suits growing out of services rendered in any one year. The premium for this additional protection will be $6, making a total premium of $21 for indemnity in the larger amounts. Physicians whose policies are now limited to $5,000 and $15,000 respectively, may take advantage of this enlarged protection by having a rider attached to their present policies on the payment of the extra premium of $6.

Dr. G. W. Henika, for seven years with the state board of health as deputy state health officer and later as organizer and supervisor of state clinics has submitted his resignation, and on January first will enter the life insurance business at Madison as a member of the firm of Kuck & Henika, general agents for the Wisconsin National Life Insurance Company at Oshkosh. Before joining the state health department Dr. Henika was a medical practitioner at Beaver Dam.

In anticipation of another shortage of nurses, such as prevailed last winter, the Milwaukee Society for the Care of the Sick has issued a call for more women to enroll for the six months' course in practical nursing at the bureau of home nursing, 808 Jackson Street, Milwaukee. Miss Ella Kalbfleisch, a graduate of Milwaukee Hospital and former superintendent of the Prairie du Chien Sanatorium, has been appointed superintendent of the bureau. Her duties include the conducting of a training course for cadette nurses, to call once a week on cases in the care of nurses who have finished the course and to keep the cadette nurses' registry, in addition to a record of calls for nurses.

The Hobbs site at Hamilton, Fond du Lac County, has been selected for the tuberculosis sanatorium to be erected jointly by Dodge, Fond du Lac and Washington

Counties. This site stood first in the judgment of Dr. J. W. Coon, expert adviser. Between fifty and sixty sites were offered. The basis of expense for the site has been established, and is figured upon the total assessed valuation of each county as follows: Dodge, $9,860.42; Fond du Lac, $7,965.02, and Washington, $4,374.50. The building expense will be figured up on the same proportion, which will be: Dodge County, 43.90 per cent; Fond du Lac, $36.20 per cent, and Washington, 19.88 per cent.

Dr. S. W. Murphy has returned to his home in Kenosha after a month's postgraduate study in pediatrics in Boston.

Dr. F. E. Andre of Kenosha has left to take a course given by the Public Health Service at Washington, D. C. He has charge of the social disease clinic at Kenosha.

DEATHS

Dr. Charles H. Vilas died at his home in Madison on November 22 at the age of 74 years. Through his death the university loses one of its most ardent friends who, since his graduation from the university with the class of 1865, had given freely of his energy and interest and taken the greatest of pride in its development. During more than four years of service on the Board of Regents he had scarcely missed a meeting either of the board or of its committees.

Born in Chelsea, Vt., in 1846, Charles H. Vilas came to Madison in 1851. He received the degree of bachelor of philosophy in 1865, graduating with a class of five students, and the master of arts degree in 1868. In 1873 he received the degree of doctor of medicine from Hahnemann Medical College and in 1876 joined its faculty, later becoming dean and then president. He was well known as an eye specialist and visited Europe several times to carry on his studies. In 1900 he retired and, after several years of travel, devoted to studies of health and social conditions in China, Japan, India, Africa and Asia Minor, he returned to Madison and devoted his last years to benevolent service to his city's people.

Madison honors Dr. Vilas as her great philanthropist who freely gave sums totalling more than $175,000 to Madison institutions and inspired others with similar spirit. Among his gifts were the $60,000 site and buildings of the tuberculosis sanatorium near Madison, the $10,000 lion house and other structures in the zoological garden in a Madison park, $25,000 for the furnishings of the Madison Y. W. C. A. building, and $30,000 for the assembly hall and furnishings for 40 dormitory rooms of the new Y. W. C. A. building, as well as the $55,000 parish house and parsonage of the First Unitarian society.

Dr. Vilas was an honorary member of the State Medical Society of Wisconsin.

Dr. Charles A. Rood of Reedsburg, died at his home, November 22, after an illness of two years. Dr. Rood was born in Packwaukee in 1852 and graduated from the Rush Medical College in 1876. After graduation, he located in Monroe where he practiced for two years, then moved to Reedsburg where he resided until the time of his death. He served as physician at the county farm and home for nearly fifteen years and also served on the Sauk County board of pensioners. He was resident physician for the Northwestern railway for thirty-five years.

Dr. A. L. Ridgman of Wisconsin Rapids died at his home, November 15, after an illness of six weeks. Dr. Ridgman was born in Sugren Falls, Ohio, in 1857, but removed with his family to Bay City, Wisconsin, when a boy. He attended Hammond College in Minneapolis, later entering an Iowa Medical College, where he continued his study of medicine, and completed his course at Rush Medical College in 1887. He was a member of the Wood County, Wisconsin State, and American Medical Associations.

Dr. C. A. Lothrop of Stanley was instantly killed October 26 when an automobile in which he was riding overturned and crushed him under it. He formerly practiced at Tomahawk and Ripon. He was born in 1869, graduating from the Hahnemann Medical College, Chicago, in 1892. He was a member of the Green Lake-Waushara-Adams County Medical Society, the Wisconsin State Society, and the American Medical Association.

MARRIAGES

Dr. Gale Huber, Minocqua, to Miss Sophia Taurianen, Calumet, Michigan, November 1, 1920.

Dr. Leo Hoffman, Campbellsport, to Miss Lillian M. Froeling, Eau Claire, November 18, 1920.

RELATION OF ACQUIRED FOOD DISLIKES OF CHILDHOOD TO DISEASES OF MIDDLE LIFE.

In the acquired food dislikes of the child, in its early start on an unbalanced diet, in the long continued total or partial absence of essential food elements, C. Hilton Rice, Jr., Montgomery, Ala. (*Journal A. M. A.*, July 10, 1920), sees the explanation of many of the metabolic disorders of middle life. He believes it to be highly probable that not a few cases of such middle life affections as hypertension, chronic Bright's disease, visceral posis, gastric and duodenal ulcers, etc., are but the remote, graver manifestations, the symptoms of which pediatricians are quick to recognize in their incipiency—the deficient diet. So convinced is Rice of the ultimate harm that is foreshadowed in the food dislikes of childhood that he has come to view the future welfare of these patients with something of the grave concern with which he looks on a valvular heart lesion or a scarlet fever nephritis, for the tendency of such children is a relapse into old habits of diet. The carbohydrate diet does not contain the potential elements essential to longevity, nor is the human machine capable of making its normal life cycle on an unbalanced fuel.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The American Red Cross and the Great War. By Henry P. Davison, Chairman of War Council of American Red Cross. New York: The MacMillan Co. 1920. Price, $2.00.

The Fundamentals of Human Anatomy, Including Its Border Land Districts. By Marsh Pittsman, A. B., M. D. 343 pages. 101 illustrations. St. Louis: C. V. Moshy Co. Price, $4.00.

International Clinics, a Quarterly of Illustrated, Clinical Lectures and Special Articles. Volume II, 30th series. Philadelphia and London: J. B. Lippincott Co. 1920.

Diseases of Children. By John Lovett Morse, A. M., M. D., Professor of Pediatrics, Harvard Medical School. Third edition. W. B. Leonnard Publishing Co., Boston.

Exophthalmic Goiter and Its Nonsurgical Treatment. By Israel Bram, M. D., Instructor in Clinical Medicine, Jefferson Medical College. St. Louis: C. V. Mosby Co. Price, $5.50.

Practical Preventive Medicine. By Mark F. Boyd, M. D., C. P. H., Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Octavo volue of 352 pages with 135 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.00 net.

Basal Metabolic Rate Determinations. By Walter M. Boothby, M. D., and Irene Sandiford, Ph. D. Section on Clinical Metabolism. The Mayo Clinic, Rochester, Minn., and The Mayo Foundation, University of Minnesota. Octavo volume of 117 pages with 11 Tables and Charts of explanation. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $5.00 net.

A Manual of Pathology. By Guthrie McConnell, M. D., Associate in Pathology Western Reserve University, Medical School, Cleveland, O. Fourth Edition. Thoroughly Revised. 12mo volume of 611 pages, with 18 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.50 net.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph. D., M. D., Professor of Pathology in the University of Chicago, and in the Rush Medical College, Chicago. Fourth Edition. Revised and Reset. Octavo of 695 pages. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $7.00 net.

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S. Fourth Edition. Revised and Enlarged. 800 engravings. St. Louis: C. V. Mosby & Co. 1919.

Man's Unconscious Passion. By Wilfred Lay, Ph.D. New York: Dodd, Mead & Co. 1920.

Regional Anaesthesia. By H. Sherwood Dunn, M. D. 24 figures in the text. Philadelphia: F. A. Davis Co. 1920.

Psycho-Pathology. By Edward J. Kempf, Clinical Psychologist to St. Elizabeth's Hospital, Washington, D. C. 87 illustrations. St. Louis: C. V. Moshy Co. 1920. Price, $9.50.

BOOK REVIEWS

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S. 4th Edition. Revised and enlarged with 800 engravings. C. V. Mosby Company, St. Louis, 1919.

Dr. Crossen's new edition of his text on the Diseases of Women is a most commendable book from every viewpoint. The ideal arrangement and presentation of the subject in 18 Chapters lays the subject and material before us in such a logical manner that it constitutes a very handy and satisfactory reference on practically all subjects pertaining to this specialty. His 800 illustrations are well chosen and quite instructive. As a textbook for medical students it should serve as a great aid as well as a handy reference for the general practitioner and the surgeon doing gynecological work.

A chapter on the internal secretions in relation to gynecology by Dr. Hugo Ehrenfest is most interesting and brings the present knowledge of this question fairly well up to date. F. B. M.

A Manual of Pathology. By Guthrie McConnell, M. D., Associate in Pathology, Western Reserve University, Medical School, Cleveland, Ohio. Fourth edition, thoroughly revised. 12mo volume of 611 pages. 18 illustrations. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $4.50 net.

The fact that this is the fourth edition of Dr. McConnell's book attests its popularity with the profession. The new edition does not differ materially from those which have preceded it but yet, certain changes have been made to bring it up to date. In this little volume, the author has not attempted to present several views or theories on several subjects but has adhered to the policy of giving the generally accepted opinion. It is not an attempt to take the place of the larger textbooks but it is a work intended for the student or practitioner to quickly find the salient points of the subject.

We are sure the fourth edition will meet with the hearty reception accorded its predecessors.

Man's Unconscious Passion. By Wilfred Lay. Ph. D. Dodd, Mead & Co., New York. 1920.

Dr. Lay's work will be of special interest to psychiatrists, psychologists and those who have been following the work of Freud and others in psycho-analysis. Dr. Lay attempts to demonstrate unconscious passion as the mainspring of everyday life.

It is essentially a work in advanced psychology, dealing with the very important, but as yet unfathomed, sex complexes and, while one does not always agree with the stress laid on some of the author's theories, there is not a page of the work that does not at least make one think.

Regional Anaesthesia. By H. Sherwood Dunn, M. D. 24 figures in the text. F. A. Davis Company, Philadelphia. 1920.

Professor Victor Pauchet is the acknowledged leading exponent of regional anaesthesia in France, and this book constitutes a resumé of his writings upon the subject and the writings of P. Sardat and J. Labaure. Dr. Dunn has also included Pauchet's and his own latest experiences, which have been inserted during the revision and amplification of the manuscript before its transmission to the publishers.

Regional anaesthesia has been immensely popularized and has gained many adherents since 1914, and we are sure this volume will be welcomed by the American medical profession. The work is divided into such sections as General Considerations, Armamentarium, Cranial Operations, Anaesthesia of the Head and Neck, of the Thorax and Abdomen, of the Genito-Urinary Organs and Rectum, and of the Extremities. The book is beautifully and completely illustrated.

Basal Metabolic Rate Determinations. By Walter M. Boothby, M. D., and Irene Sandiford, Ph. D., Section on Clinical Metabolism, the Mayo Clinic, Rochester, Minnesota, and the Mayo Foundation, University of Minnesota. Octavo volume of 117 pages. 11 tables and charts of explanation. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $5.00, net.

This little work is a splendid laboratory manual on a new and important laboratory procedure. It has been prepared in the effort to render this valuable diagnostic method available to any well equipped and scientifically conducted laboratory, and with the hope that ratios of calormetry will not be thrown into general discredit by neglect of the details requisite by obtaining a true basal metabolic rate.

The general subject is discussed, the details of technique given, the apparatus described and the methods of calculation given in detail. The work is well illustrated and should encourage a development of this work by the groups of men forming in our larger centers.

Practical Preventive Medicine. By Mark F. Boyd, M. D., C. P. H., Professor of Bacteriology and Preventive Medicine, University of Texas, Medical Department. Octavo volume of 352 pages. 135 illustrations. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $4.00, net.

Dr. Boyd's new work should find a hearty welcome by those interested in the field of modern preventive medicine. The author has succeeded in condensing in 350 pages a subject usually requiring two or three volumes and, while the work represents the minimum of knowledge of the subject which a student or practitioner should possess, it apparently omits no essentials. Numerous references are given for the student desiring a broader knowledge on any particular subject. It is a work which should not be limited to those actively engaged in public health work but should be read by the medical student, the practitioner and the layman interested in public health, and it should bring especially to the medical profession a realization of their public health responsibilities and stimulate co-operation with our public health organizations.

The work is divided into six general sub-divisions: Epidemiology, Deficiency Diseases, Occupational Diseases, Special Aspects of Sanitation, Demography and Public Health.

Chemical Pathology. By H. Gideon Wells, Ph. D., M. D., Professor of Pathology in the University of Chicago and Rush Medical College. Fourth edition, revised and reset. Octavo of 695 pages. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $7.00, net.

Dr. Wells' work is a discussion of general pathology from the standpoint of the chemical processes involved. He is too near a neighbor of ours for us not to appreciate his worth, being professor of pathology at the University of Chicago.

The work is very appropriately dedicated to Ludvig Hektoen, who has meant so much to the advances made in pathology in this section, and also a Chicago neighbor. Dr. Wells' fourth edition has been thoroughly revised and rewritten, yet the general plan of the previous editions has not been changed. A new chapter has been added which concerns the nutritional factors that are essential to growth and repair and without which serious deficiency diseases may arise. A new chapter on anaphylaxis and allegy has been provided.

To keep down the size of the volume, Dr. Wells has had printed in smaller type much of the matter. No other work as satisfactorily presents the chemical changes which occur in pathological phenomena, and Dr. Wells' book on this subject holds a place all its own in medical literature.

Psycho-Pathology. By Edward J. Kempf, Clinical Psychologist to St. Elizabeth's Hospital, Washington, D. C. 87 illustrations. C. V. Mosby Co., St. Louis. 1920. Price, $9.50.

A review of this volume is difficult without quoting from the author's preface. It has been written for the professional student of human behaviour who must have an insight into human nature in order to deal justly and intelligently with problems in abnormal behaviour as they are brought to physicians, police courts and hospitals for the insane.

Dr. Kempf has avoided speculation and theorizing and has devoted most of the space to plain expositions of the actual difficulties of cases. It is largely a clinical volume and is distinctly clinical teaching. The case material has been taken from the government hospital for insane at Washington with the exception of some work furnished by Professor Adolf Meyer of Johns Hopkins while the author was his assistant at the Phipps Psychiatric Clinic.

The work is the latest and undoubtedly the most valuable contribution to our literature on human behaviour. It is original and it is new—new in theory, new in word and new in method of presentation. It should certainly be in the hands of every psychiatrist and will prove most valuable and interesting reading to any physician.

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WHAT ARE VITAMINES?—BEST DESCRIBED BY WHAT THEY DO.

"What are vitamines?"

This is a question asked repeatedly since the importance of these compounds in foods has come into prominence, but no definite answer has yet been given. Investigations by scientists at universities, agricultural experiment stations, and institutions for medical research have revealed much information regarding the function of vitamines in body maintenance and building, and the parts of the various foods in which they are to be found.

That vitamines are compounds absolutely essential in the food, in order to maintain the weight of the body and produce growth, has been definitely proved. The lack of vitamines causes deficiency diseases, so named because they are due to lack of something in the diet. Vitamines are present and are needed in such small quantities in the food that chemists have not yet been able to isolate them from the many other compounds which are in foods. For this reason, we know very little of the actual character of vitamines.

THREE TYPES OF VITAMINES.

According to a statement by Dr. Carl O. Johns, in charge of nutrition work in the Bureau of Chemistry, U. S. Department of Agriculture, vitamines have been classified into three different types depending upon the functions which they have in promoting well-being and growth.

The first type is known as water-soluble vitamines, and these are necessary in order to obtain growth from food. Lack of these causes beri-beri, which manifests itself by disease of the nervous system and by other symptoms. These vitamines are found in seeds, in green plants, in certain bulbs and fleshy roots and fruits, and in milk and eggs, as well as in certain organs in the animal body. The seeds referred to include beans, nuts and the various cereal grains. When cereals are very highly milled in order to obtain a very fine white flour, a large part of the vitamines is removed. Vitamines are also lost when rice is polished in order to remove the outer layers which contain most of the vitamines. It is for this reason that a diet consisting mainly of polished rice may cause beri-beri, while unpolished rice does not cause this disease.

FAT-SOLUBLE VITAMINES.

The second type is known as fat-soluble vitamines, and these are found in butter, eggs, milk, and in certain animal organs such as the heart, kidneys, and liver, and to some extent in other fats as well as in green vegetables. They also exist in smaller quantities in certain seeds. When fat-soluble vitamines are absent from the diet, animals and man are subject to a disease of the eyes, which appears to be related to xerophthalmia and which, if prolonged, may produce blindness.

The third type is known as antiscorbutic vitamines—that is, those which prevent scurvy, which manifests itself by disease of the bones as well as in other ways. These vitamines are found in oranges, grapefruit, lemons and other citrus fruits, and in green vegetables such as tomatoes, spinach, and lettuce, and in eggs and raw milk. The drying of vegetables frequently destroys the activity of the antiscorbutic vitamines. The best source of vitamines is in the leafy parts of vegetables, and this is one of the reasons why spinach, lettuce, and cabbage are valuable foods.

NEURALGIA.

Sometimes it seems as though some torturer
Were boring with a red hot auger, straight
Into my brain, with now and then a twist
Of extra force, as if to illustrate
What he might do with turning of the wrist,
If I should dare to stir!

Or, like a dance of many a demon sprite,
Each footfall thrilling back a burning pain
Along the quivering nerve; they wander far,
Those dancers,—out and back and out again
As radiate from a myriad pointed star
The tiny shafts of light.

And sometimes 'tis as if someone had pressed
Upon my head a cap of agony,
So closely bound around my aching brow,
That I may feel the cincture, steadily
Draw tight and tighter, till I wonder how
The brain endures the test.

And then the *tout ensemble* act is on!
When auger, cap and every demon sprite
Gather to exploit each his specialty,
And, to that end, with hearty zeal unite,—
When, just as struggling hope has ceased to be,
Presto! The fiends are gone!

ANNA N. REED,
839 Shepard Ave.,
Milwaukee, Wis.

TREATMENT OF DIABETES COMPLICATED BY PULMONARY TUBERCULOSIS.

The fact that the untreated diabetic is more likely to develop pulmonary tuberculosis than the diabetic who is kept sugar-free by modern methods is emphasized by the experience of N. W. Janney and R. R. Newell, Santa Barbara, Calif. (Journal A. M. A., July 17, 1920). In a series of sixteen diabetic cases complicated by pulmonary tuberculosis showing activity, twelve patients definitely improved during a course of institutional treatment; diabetic symptoms disappeared in all but two cases, observed but a short interval. Tuberculosis symptoms improved in the majority of cases. Principles of treatment recommended are the judicious employment of sufficient undernutrition, combined with rest, to maintain the patient sugar-free and control the tuberculosis. Fasting is unnecessary to obtain good results. Ill advised fasting may lead to a fatal outcome. Rest is at least as important as in the treatment of uncomplicated pulmonary tuberculosis.

The Wisconsin Medical Journal

Volume XIX — Milwaukee, January, 1921 — Number 8

TRANSACTIONS

OF THE

SEVENTY-FOURTH ANNUAL MEETING

OF THE

STATE MEDICAL SOCIETY OF WISCONSIN

AT LA CROSSE, SEPTEMBER 8, 9 and 10, 1920

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1920

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3rd Vice-Pres., P. F. Rogers, Milwaukee.

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TRANSCRIPT OF PROCEEDINGS, HOUSE OF DELEGATES, STATE MEDICAL SOCIETY OF WISCONSIN.

SESSIONS HELD AT LA CROSSE, WISCONSIN, SEPTEMBER 8, 9 and 10, 1920.

OPENING SESSION WEDNESDAY, SEPTEMBER 8, 1920, AT LA CROSSE COMMERCIAL CLUB, AT 9 A. M.

Registration.

Meeting called to order by the President, Dr. C. R. Bardeen, Madison, Wisconsin.

PRESIDENT: I will call the House of Delegates to order.

The first order of business, registration, has been attended to, and it will not be necessary to read the roll call now, so we will proceed with the reports of the various committees. These reports, as I understand, are already submitted in the printed pamphlet, and I will take up each report and ask if there is any discussion about the report, or if there are any additional remarks to be made with reference to any of the matters contained in the report.

The report of the Committee of Public Policy and Legislation was presented by the Chairman, Dr. Edward Quick, Milwaukee, as follows:

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

To the House of Delegates:

This has been a relatively inactive year for your committee on Public Policy and Legislation. When there is no general session of the legislature, there is very little to do. At a special session of the legislature called early this summer by the governor, funds were voted permitting the University of Wisconsin to erect a general hospital for the use of all the people of the State and for the University to use for clinical teaching. I believe every member of our State Medical Society is gratified with the prospect of having a "State of Wisconsin General Hospital" located at Madison under the control and supervision of the Board of Regents of the University. The hospital will operate under a statute similar to the statutes establishing the State Hospitals in Michigan and Iowa. The bill appropriates $750,000.00 for the hospital building, $150,000.00 for a nurses' home and $450,000.00 for furnishings and equipment. There can be no question about the success of this undertaking. There was practically no opposition to the passage of the bill by the legislature.

It has been brought to the attention of your committee by Dr. E. V. Brumbaugh, Deputy Commissioner of Health of Milwaukee, that there is a serious defect in the law requiring the reporting of venereal diseases. This defect is that there is no provision made in the statutes requiring others than physicians to make reports. Dr. Brumbaugh suggests that the law should be amended so as to make it the duty of every person having knowledge of the existence of venereal disease to report the same to the proper authorities. The object of this change is to secure reports from Christian Science Healers, Osteopaths, Chiropractors, and all others treating diseases. This change in the law in our opinion is desirable and should be supported.

There has been some agitation emanating from Oshkosh against the common practice of hospitals remaining closed to all practitioners except physicians and surgeons. A bill will probably be introduced at the next session of the legislature requiring hospitals to permit osteopaths, chiropractors, or others, or at least osteopaths who are licensed to treat patients in the hospital. The contention is made that hospitals are exempted from taxes and are, therefore, more or less public institutions. It is maintained that any citizen has the right to enter these hospitals on equal terms and that "equal terms" means the right to select his own school of thought respecting medical practice. The

answer to this is that adherents of these schools of thought should establish their own hospitals which will be free from taxation. If they do I am sure we shall not clamor to enter them and treat our patients there.

Respectfully yours,

EDWARD QUICK,
Chairman.

Is there any discussion, or are there any original remarks to be made on the report of the Committee on Public Policy and Legislation? If not, we will hear the report of the Committee on Publication:

REPORT OF PUBLICATION COMMITTEE.

To the Members of the State Medical Society of Wisconsin.

GENTLEMEN:

To any member who has carefully scrutinized the general make up and the contents of this monthly journal, a detailed report by the Publication Committee seems almost ambiguous. The Journal speaks for itself and no one will question but that it speaks well.

As chairman of the Publication Committee I must admit that the committee can assume no credit for this. The high standard maintained by the Journal is due entirely to the conscientious, individual and combined efforts of the Editor, Dr. Sleyster, and the Managing Editor, Dr. J. P. McMahon.

It may be pertinent to remind the members of the Society that the Wisconsin Medical Journal is their Journal and in this possession should appreciate that ownership means not only privilege but also responsibility. While it is the Editor's duty to collect, edit, and arrange the reading matter, we should not expect him to bear the additional burden of supplying the material.

During the past year several questions of policy have been brought before the committee. Our most serious problem to answer has been that of finances. Some salary increases for stenographic service had to be made, but these were so slight that they had very little, if any, material effect on the cost of the Journal. To meet the increase in the cost of printing (70% in the past 14 months) is at present our greatest difficulty. The appended report from Dr. McMahon shows that the per copy cost of the Journal has jumped from 7 1/3 cents in 1919 to 10 10/11 cents in 1920—largely due to increased printing costs. Through solicitation of bids from 13 publishers an attempt was made to secure more favorable contracts. We were unable to do better than we are doing with our present publishing house. The question of increasing the advertising rates is now before the committee, and we hope that within a short time we will be able to secure increased revenue without lowering the standard of our advertising.

Although we obtain some slight help through this source it will by no means be sufficient to cover the increased cost—estimated at about $3,000.00, so that at present we are facing the probability of increasing the cost to the members or if printing rates advance much more, to suspend publication for a time.

The Financial and Publishing Cost Statements and the report of the Managing Editor are appended.

Respectfully submitted,

OSCAR LOTZ,
Chairman, Publication Committee.

August 12, 1920.

Oscar Lotz, M. D., Chairman,
120 Wisconsin Street,
City.

My dear Doctor Lotz:

Enclosed you will please find report showing the earnings, expense, disbursements and circulation of the Wisconsin Medical Journal during the period from August 1, 1919, to August 1, 1920. In order to make the report more readily comparable to the preceding report, your attention is respectfully directed to the following data:

Total gross earnings from Aug. 1, 1918, to Aug. 1, 1919	$3,925.60	
Dividend from Cooperative Medical Advertising Bureau	48.20	$3,983.80
Total gross earnings from Aug. 1, 1919, to Aug. 1, 1920	$4,522.42	
Dividend from Cooperative Medical Advertising Bureau	56.55	$4,578.97

Total expenses from Aug. 1, 1918, to Aug. 1, 1919	$5,467.77
Total expenses from Aug. 1, 1919, to Aug. 1, 1920	6,960.99
Total collections and money received from The State Medical Society during the period, Aug. 1, 1918, to Aug. 1, 1919	4,953.03
Total collections and money received from The State Medical Society during the period, Aug. 1, 1919, to Aug. 1, 1920	6,572.44
Total uncollectable accounts charged off in the report covering the period from Aug. 1, 1918, to Aug. 1, 1919	15.00
Total uncollectable accounts charged off in the report covering the period from Aug. 1, 1919, to Aug. 1, 1920	None
Total number of copies distributed to Members of the State Medical Society from Aug. 1, 1918, to Aug. 1, 1919	21,724
Total number of copies distributed to Members of the State Medical Society from Aug. 1, 1919, to Aug. 1, 1920	22,750
Cost of each copy forwarded to Members of the State Medical Society from Aug. 1, 1917, to Aug. 1, 1918	.09½
Cost of each copy forwarded to Members of the State Medical Society from Aug. 1, 1918, to Aug. 1, 1919	.07⅓
Cost of each copy forwarded to Members of the State Medical Society from Aug. 1, 1919, to Aug. 1, 1920	.10 10/11
Increased cost of each copy forwarded to Members during the current year over that of the preceding year (approximately)	.03⅔

From the above comparison it is seen that the gross earnings during the period from Aug. 1, 1919, to Aug. 1, 1920, exceeded those of the preceding year by $595.17, practically all of which is creditable to the advertising pages.

That the expense for publishing the Journal during the current year exceeded that of the preceding year by $1,493.22, which is explained as follows:

On March 10, 1920, there was an advance of 50% in printing (making a total of 70% advance in this item during a period of 14 months) which advance increased our printing bill for the last 5 months approximately $1,100.00.

There were forwarded to members 1,030 more copies during the period covered by this report than during the period covered by the preceding report at an average cost of 18 cents per copy. This item accounts for $185.40 of the increase.

It became necessary to purchase additional office supplies (particularly a steel filing cabinet $75.00) which, with increased cost of all necessary office supplies, advanced these items over similar items for the preceding year by $177.20, which with the increased cost of postage and miscellaneous expense accounts not directly comparable explains the balance of increased cost of publishing the Journal amounting to $30.62, and finally;

That the above data explains the increased cost per copy during the last year approximating 3⅔ cents.

The greater part of the advance in the printer's quotations, at least, was reasonable owing to the ever increasing cost of print paper and the increasing demands of labor.

As shown above, the total increase in publishing the Journal during the last year over the preceding year was $1,493.22, and that the 50% increase in the item of printing was in effect during only 5 of the 12 months period.

It is estimated that were the 50% increase in force during all of the 12 months period, as it will be during the coming 12 months, unless the price of print paper and the cost of labor be reduced, the expense of printing will be increased by 7/12, or approximately $1,540.00 during the ensuing year, making a total annual increase in the cost of printing over the amount required for this item previous to March 1, 1920, the date of the recent advance of 50%, approximately $2,640.00, and further;

That the increase in the items of mailing, office supplies, clerical services and miscellaneous general expense will amount to approximately $360.00, making the total estimated increase in the cost of publishing the Journal for the ensuing year $3,000.00, which, divided among a membership of 2,100 will require an increased revenue for the Journal of about $1.43 from each member.

Respectfully submitted,

J. P. McMahon,

Managing Editor.

THE WISCONSIN MEDICAL JOURNAL.

FINANCIAL STATEMENT.

August 1, 1919, to August 1, 1920.

Cash Balance August 1, 1919		$ 117.57	
Receipts			
State Medical Society	$2,506.00		
Advertising	3,907.81		
Subscription	39.15		
Cooperative Medical Advertising Bureau Surplus	56.55		
Half Tones and Zinc Etchings	62.93	$6,572.44	$6,690.01
Disbursements:			
Printing	$3,977.39		
Salaries	1,110.00		
Commissions	529.04		
Subscription	2.00		
Mailing Expenses	161.50		
Postage—Managing Editor's Office	51.00		
Postage—Editor's Office	15.00		
Office Supplies and Expenses	190.45		
Miscellaneous General Expenses	118.75		
State Medical Society Inserts	6.00		
Equipment (Pencil Sharpener)	1.50		
Half Tones and Zinc Etchings	88.01	$6,250.64	$6,250.64
Balance on Hand August 1, 1920			$ 439.57

Assets.

Office Equipment	$ 176.63	
Cash in Bank	439.37	
Accounts Receivable	1,997.69	
Merchandise	42.12	$2.655.81

Liabilities.

Accounts Payable	$1,629.83	
Credit Balances on Advertising Accounts	34.08	$1,663.91
Assets Exceed Liabilities		$ 991.90

THE WISCONSIN MEDICAL JOURNAL.

PUBLISHING COST STATEMENT.

August 1, 1919, to August 1, 1920.

Income From Publishing:		
Advertising, gross charges	$4,485.27	
Less discounts	94.32	
Net income from advertising		$4,390.95

Subscription	37.15	
Cooperative Medical Advertising Surplus	56.55	
Total income from operation		$4,484.65
Publishing Expenses:		
Printing	$3,892.55	
Salaries	1,380.00	
Commissions for securing advertising contracts	1,003.94	
Subscription	2.00	
Cuts and drawings	99.26	
Mailing expenses	203.54	
Postage, Managing Editors and Editor's Office	66.00	
Office supplies and expenses	191.95	
Miscellaneous and general expenses	121.75	
Total publishing expenses		$6,960.99
Net cost of publishing the Journal		$2,476.34

To the Members of the State Medical Society:

This deficit of $2,476.34 represents the cost of the State Medical Society of circulating 22,750 copies of the Journal, at about 10 10/11 cents per copy.

The report of the Committee on Medical Defense was presented by the Chairman, Dr. H. Reineking, Milwaukee, as follows:

REPORT OF COMMITTEE ON MEDICAL DEFENSE.

To the House of Delegates of the State Medical Society of Wisconsin:

GENTLEMEN:

Owing to the early date of the present meeting of the Society, this report covers a period of only eleven months, Sept. 1, 1919, to July 31, 1920. Bearing this in mind, it will appear that the number of cases brought to the notice of the committee, and the expense of our defense system during this period of time has been about the same as during a corresponding period of the previous year.

Ten cases applied for defense and were all referred to our attorneys. Besides these, twelve cases holding over from previous years required more or less attention.

In the new cases, the following causes of action were alleged:

1. (112) Improper treatment of Obstetric case.
2. (113) Improper pelvic operation.
3. (114) Improper treatment of abdominal abscess.
4. (115) Improper treatment of enlarged testicle.
5. (116) Improper care of fractured clavicle in new born.
6. (117) Improper treatment of injured hand.
7. (118) Neglect to protect family during presence of typhoid.
8. (119) Improper treatment of knee injury.
9. (120) Erroneous medical diagnosis and treatment.
10. (121) Leaving surgical instruments in abdomen.

In five of these ten cases no complaint had been served up to the date of this report, and it is not likely that these will be brought to trial. The results achieved by our attorneys have again been very gratifying, unquestionably the best that could be obtained under existing conditions. The deterrent effect of our defense system upon prospective litigants is very evident; they know that if they go into court they will be up against a hard, stubborn fight from beginning to end.

During the last year or two it has become evident that the contribution to the defense fund of $2.00 per member is not quite sufficient to keep the committee out of financial embarrassment. It would seem well therefore to raise this contribution to $2.50 per member; this, it is believed, would prevent any deficits.

Respectfully submitted,

H. REINEKING,

Secretary.

DR. H. REINEKING, Milwaukee: Mr. Chairman: There is one point in the report to which I wish to call attention, and that is the suggestion for an additional assessment of 50c per member.

It seems that for the present at least this will not be necessary. The expenses this year have been just about $500 less than for the previous year, but of course it has been a short year, covering only 11 months, this meeting being held so much earlier than usual. At the same time we have over $3,100 in the treasury of this defense fund, so it will not be necessary to take any action at this time.

Another matter which has occurred to me pertains to the election of this committee. There is nothing said in our constitution and by-laws as to how this committee shall be constituted, but certain resolutions are on record, and from all that I can glean from those resolutions and from conversations with Dr. Patek, it is the business of the council to elect this committee; and perhaps, if it is so decided, it would be better to leave the election of the new committee for the council. On the other hand, Dr. Sleyster informs me that the members have for years been elected from the floor of the House of Delegates, so that according to such precedent it might be all right to continue that practice.

PRESIDENT: Would you care to offer a resolution carrying that point, Dr. Reineking, at this time?

It has been suggested that the House of Delegates should this morning appoint a committee to take up the various reports and resolutions and get them in some order for presentation, and it might possibly be a good thing to turn this matter over to that committee, if such a committee is appointed.

DR. H. REINEKING, Milwaukee: I think the secretary and Dr. Patek would be in a position to enlighten us upon the matter, and I would prefer to hear from them before offering any resolution.

PRESIDENT: Dr. Patek, have you anything to say on this subject?

DR. A. J. PATEK, Milwaukee: Mr. President and Gentlemen: I want to correct the statement of Dr. Sleyster to the effect that the appointment of this committee was made from the floor. That is an error. The appointments on the committee have prior to the last meeting always been made by the Council, and not from the floor nor by the House of Delegates. The articles and rules under which the Defense was developed and organized make the council an appointing body, and while it occasionally happened that the council failed to make the appointments at its annual meeting, the action of the committee was ratified at a subsequent meeting of the council. Last year, or two years ago for the first time, that error crept in, because my resignation was submitted at the meeting of the house. That body then appointed a new committee, and by error the appointments were made from the floor. Whether it is a better plan to have them made by the House of Delegates or by the Council, is a matter, of course, that must be left to the judgment of this body, but it is a fact that the council has always appointed the committee prior to this action of the House.

PRESIDENT: Would it in your opinion be best to have the action continued by the Council?

DR. A. J. PATEK, Milwaukee: I should think it would be very much better to have the Council do it. The Council can deliberate so much better, and can select the men if you want to make a change prior to the meeting. I think it is better and more satisfactory to have the appointment in that form.

PRESIDENT: Dr. Sleyster, have you anything to suggest with relation to this matter?

SECRETARY SLEYSTER: I stand corrected by Dr. Patek. I know that during the last two or three years this committee has been elected from the floor, but there is nothing in our constitution relative to the appointment of this committee. The committee is not provided for in the constitution. On the advice of attorneys some years ago that the less said about Medical Defense, the better, we have never had very much in writing, or in the records of the Society regarding it. But I think that the House of Delegates should authorize some definite way of appointment of this committee, and I really believe that as long as it involves the expenditure of a considerable sum of money, for which the Council is directly responsible, that it would be better to have the committee appointed by the Council. I believe, however, that is a matter which could very properly be referred to the committee which you will appoint today on the report of officers and committees, and they can bring back such recommendation as they make on the matter tomorrow.

PRESIDENT: If there is no objection, that will be done.

DR. S. S. HALL, Ripon: Mr. President and Gentlemen: I wish to state that several years ago our attorney waived that instruction, that we should not say anything about the medical defense. So we have been in the habit of opening our mouths a little about it in the last few years.

PRESIDENT: If there is no objection, then we will submit the matter to the attention of the committee, as has been suggested.

DR. H. REINEKING, Milwaukee: Mr. President, it would seem well to pass a resolution requesting the Council to ratify the actions of the committee during the last two years; as a member of that committee, I do not wish to make that motion.

SECRETARY SLEYSTER: Mr. President, the last House of Delegates authorized the appointment in the future of a committee which would study the reports of committees as published in the Hand Book, the reports of officers, and bring in any resolutions necessary before the House of Delegates on the following day. I wish to say that in the past many valuable suggestions have been made in both the committee reports and the officers' reports, which have been allowed to slip by without anyone taking particular notice of them. I think it would be well for you to appoint that committee at this time, so that they may be taking notice of all the various matters that come up in this morning's session, consider them, and report back to the House of Delegates.

PRESIDENT: Is there any objection to that, or are there any suggestions to be made? If not, I will appoint on that committee Dr. A. J. Patek, as chairman, Dr. Abraham and Dr. Dodd.

The next business to come before the House of Delegates is the election of a committee of twelve on nominations, one from each district.

SECRETARY SLEYSTER: I would suggest, Mr. President, that inasmuch as all the delegates are not here, and we may find difficulty in finding members of the committee for some of the districts, that we postpone this action to a later order of business this morning.

PRESIDENT: If there is no objection, and the suggestion is acceptable to the House of Delegates, we will follow that procedure and bring up this matter of election of the Committee of Twelve on Nominations, at a later time this morning.

The next business is the report of the Committee on Health and Public Instruction.

The report of the Committee on Health and Public Instruction was presented by Dr. W. D. Stovall, Madison, chairman, as follows:

REPORT OF COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION.

The activities of this committee have been confined entirely to the consideration of the needs for public instruction on modern public health methods and the relation of the medical profession and the public in general to the activities of health agencies.

Our inquiries have convinced us that already there are too many organizations doing this type of work, and that there is much duplication.

We further found that, while there are many agencies giving publicity to public health problems through the newspapers and otherwise, none are making an appeal in a professional way to secure the cooperation of the medical profession in carrying out measures for the prevention of disease.

The important position occupied by physicians and the organized profession with reference to the ultimate success or failure of any scheme having for its purpose disease prevention, is too obvious to need argument. We believe that the establishment of the section on Preventive Medicine, and the department on Preventive Medicine in the Journal is an important step toward the coordination of the practice of medicine with the activities of health agencies, and is filling the gap left by other organizations interested in public health work.

We recommend that the money available for propaganda work of this kind be applied to the Preventive Medicine Department of the Journal.

Respectfully,
W. D. Stovall,
Chairman.

President: Are there any remarks in relation to this report? The next business is the report of the Committee on Medical Education.

The report of the Committee on Medical Education was presented by the chairman, Dr. L. F. Jermain, Milwaukee, as follows:

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION.

To the House of Delegates, State Medical Society of Wisconsin.

Gentlemen:

In 1906 the United States had 162 medical colleges or over one-half of the world's supply. At the present time there are 86; 77 of these are regular, 5 homeopathic, 1 eclectic, and 3 non-descript.

Of the 86 medical schools now existing, 70 are class "A"—8 class "B" and 8 class "C" schools.

Of the class "A" schools, 59 give a complete four years course, while 11 offer only the first two years.

At present a survey of the medical schools is being made by the Council on Medical Education. When completed it will serve as a basis for a proposed reclassification into class "A+"—class "A"—class "B" and class "C".

A reduction in the number of medical schools and the adoption of higher requirements has resulted in the number of medical students being reduced from 28,142 in the year 1904 to 13,052 in the year 1919. The latter figure without doubt represents the low ebb and a constant, annual increase in the number of medical students can be expected.

What may well be termed the American standard of medical education consists of:

("A") 4 years of approved high school education,

("B") 2 years of pre-medical college work,

("C") 4 years in an acceptable medical college,

("D") 1 year interneship in an approved hospital.

Of the class "A" medical schools, 16 limit their enrollment and 12 require a fifth hospital or laboratory year. In 7 medical schools the fifth year requirement affects the graduating class of 1920. Marquette Medical School is among this number.

The states of Pennsylvania, New Jersey, Alaska, Rhode Island, North Dakota, Washington, Illinois, Michigan, Iowa and Texas require an interneship as an essential qualification for a license. It is hoped that Wisconsin will join these ranks at the coming session of the legislature.

The enrollment of students in Wisconsin medical schools is rapidly reaching the capacity of these schools for efficient training.

Therefore, at the recent special session of the legislature, the appropriation of funds aggregating $1,350,000.00 for the erection of a state general hospital, to be operated under University supervision at the State University, was wise and needful legislation. At the same session a bill was passed providing for general state and county aid in the care of the indigent sick at the State general hospital. This bill follows closely similar laws now in successful operation in Michigan and Iowa. The harmonious co-operation in the development of medical education on the part of the State University and Marquette was again shown by the active support for the passage of the bill given by Marquette, when these bills were before the legislature. The authorities of both institutions are firmly convinced that the best interests of medical education in Wisconsin require the utmost support of both institutions. They believe that friendly rivalry between two institutions, neither overcrowded, is better than state or private monopoly. It is the intention, if possible, to start the third year of the medical course in Wisconsin in 1923 and the fourth year in 1924.

With the completion of this hospital and the realization of a complete medical course at Madison, Wisconsin will no longer be obliged to look to her sister states for the education of her students. It is only by training our own students in our own state, that we can hope to supply our hospitals with internes and retain, for service at home, the best medical talent produced.

Respectfully submitted,
L. F. Jermain, *Chairman.*
Chas. R. Bardeen.
Edw. Evans.

President: Are there any further additions to this report, or any suggestions to be made in regard to it? The next in order is the report of the Committee on Necrology.

The report of the Committee on Necrology was presented by Dr. Rock Sleyster, Wauwatosa, chairman, as follows:

REPORT OF THE COMMITTEE ON NECROLOGY.

To the House of Delegates:

The following is the report of the Committee on Necrology, including deaths reported to September first, 1920. Names of members of the State Medical Society are printed in bold face type:

Alderson, J. C.....Wausau
Alexander, G. L.....Milwaukee
Amundson, A. C.....Cambridge
Aubin, J. N.....Peshtigo
Bardeen, Mrs. Althea.....Madison
Barker, G. A.....Menomonie
Batchelor, W. A.....Milwaukee
Carlson, O. W.....Milwaukee
Christiansen, C.....La Crosse
Clason, J. A.....Fond du Lac
Drew, R. J.....Alma Center
English, J. E.....Baraboo
Fletcher, F. E.....Ashland
Fox, G. W.....Milwaukee
Gordon, R. J.....Gordon
Gunderson, G. S.....Milwaukee
Gygi, John.....Big Falls
Hall, C. H.....Huron, So. Dak.
Hurlbut, W. H.....Fond du Lac
Johnson, F. P.....Ontario
Judd, W. H.....Janesville
Kellner, Mrs. Bessie.....Maribel
Klemm, L. F.....Milwaukee
Leslie, J. H.....Verona
Lindenschmidt, F. J.....Milwaukee
Loehr, Oscar.....Milwaukee
MacDonald, E. A.....Cuba City
Martin, O. H.....DePere
McCallen, A. E.....Wis. Vet. Home
McCrory, T. J.....Racine
Midgley, A. E.....Cuba City
Mulholland, J. E.....Manitowoc
Obertin, C. A.....Union Grove
Pease, W. A.....Otsego
Powell, Geo.....La Crosse
Pynn, R. C.....Delavan
Rodermund, M. J.....Madison
Rogers, F. W.....Hartford
Rundlett, J. R.....Delavan
Seldon, W. B.....Thorp
Smedal, G.....La Crosse
Toby, E. A.....River Falls
Van Devoort, Michael.....Guthrie, Okla.
Violet, Malcom G.....Waterford
Watrous, F. H.....Milwaukee
Wilson, Jane N.....Madison

Respectfully submitted,

ROCK SLEYSTER,

Chairman.

PRESIDENT: Is there any discussion of this report? The next in order is the report of the Hospital Committee.

The report of the Hospital Committee was presented by the chairman, Dr. L. F. Jermain, Milwaukee, as follows:

REPORT OF THE HOSPITAL COMMITTEE.

To the House of Delegates, State Medical Society of Wisconsin.

GENTLEMEN:

Your committee has had two meetings; one at the time of the last meeting of the State Medical Society and one in January, 1920. At the last meeting the task of recommending to the Council on Medical Education ratings for Wisconsin hospitals was undertaken.

Pursuant to the instructions from the Council on Medical Education, all hospitals were classified into four groups:

Group 1. General Hospitals.

Group 2. Special Hospitals.

Group 3. State or other Hospitals for nervous and mental or insane patients.

Group 4. All Hospitals which do not desire or make use of internes.

Hospitals desiring internes and coming under group one, two and three were listed as follows:

Class A—Hospitals that without question were in a position to furnish an acceptable training for internes in accordance with the standards of essentials of the Council on Medical Education.

Class B—Doubtful cases or hospitals which were deficient in certain important particulars but which might be capable of furnishing acceptable interneship.

Class C—Hospitals which without question were not capable of furnishing acceptable interneships.

Hospitals which did not desire or make use of internes were listed according to the character of buildings, equipment, management, system of treatment, organization of staff, etc., as:

Class A—Excellent.

Class B—Good.

Class C—Fair.

Class D—Poor.

Class E—Bad.

The data which guided the committee in this classification was obtained by inspection, correspondence, personal knowledge or otherwise. In order that the element of personal knowledge of hospitals might enter into the classification to the fullest degree, members of the State Medical Society from all sections of the State, who were known to be familiar with the hospitals in their respective sections were invited to the meeting and from them most useful and accurate information was obtained.

Under the influence of the American College of Surgeons, the Council on Medical Education and the Catholic Hospital Association, hospital progress in this State has been truly marvelous and Class "C" and "B" hospitals of yesterday will be found to be Class "A" hospitals of tomorrow.

An accurate and just classification of the hospitals

of the State is a tremendous and responsible task and should be based solely upon knowledge obtained by personal inspection. Your committee, therefore, recommends that the House of Delegates take the necessary steps to secure a competent person to make such personal inspection; the data obtained to serve as a basis for future classification.

Respectfully submitted,

L. F. Jermain, *Chairman.*
L. E. Fazen,
F. S. Wiley,
J. V. R. Lyman,
F. G. Connell.

President: Is there any discussion regarding this report?

Secretary Sleyster: Mr. President, as this report recommends the expenditure of some funds, which are not available, I would suggest that we hear from Dr. Jermain as to what the probable cost would be, and the committee recommendations in the matter.

Dr. Louis F. Jermain, Milwaukee: Mr. President and Members of the House: I have no idea what the cost would be, but I have felt right along that it would be proper for the State Medical Society to secure some competent individual to make this hospital inspection. The Committee is to get accurate information on the hospitals of this state. This is a big job and cannot be done well without making personal inspection of each institution. This is the factor upon which you have to base your hospital ratings and your hospital classification, if you want to be just and fair to the institution.

Many of the states have done just exactly what is recommended in this report. In some states, as for instance Pennsylvania, they have a state law which provides for hospital inspection. I do not think that the cost would be so great but what the State Medical Society could do it. The Council on Medical Education and Hospitals is not at present in a position to do this work so it is up to each state to do it and allow the Council on Medical Education and Hospitals to have the reports for use in their classification.

Secretary Sleyster: Mr. President, I would suggest that Dr. Jermain advise with Dr. Hall, our treasurer, and then with the new committee which is appointed this morning on reports of officers and committees, and try, if possible, to arrive at some definite sum which could be authorized at this meeting, so that the matter will not lie over for another year without any action.

President: If that action is satisfactory to the House of Delegates, it will be followed.

The next report in order is the report of the Delegates to the Annual Meeting of the A. M. A.

The report of the Delegates to the meeting of the American Medical Association was presented by the chairman, Dr. H. M. Brown, Milwaukee, as follows:

REPORT OF DELEGATES TO A. M. A.

To the Officers and Members of the Wisconsin State Medical Society.

Gentlemen:

Your Delegates to the meeting of the American Medical Association, held at New Orleans, April 26-30, 1920, desire to make the following report:

All of the delegates attended the session and were present and took an active part in the proceedings of the House of Delegates. There was much business of the most vital importance to every member of the Medical profession in the country.

The report of the Committee on changes in By-laws and Constitution was read by Dr. Rock Sleyster, and his presentation of the matters to be considered was received with applause and appreciation by the entire House.

A determined effort on the part of some of the past officers, and of a group of mistaken members of the Association, not members of the House, to carry a motion that had for its purpose the recognition and approval of a system of National Compulsory Health Insurance, with its accompanying restrictions of the liberties of the individual practitioners of our profession, was fought most valiantly by the Delegates from all parts of the country, and was finally killed by a unanimous vote of the House of Delegates.

An effort on the part of certain elements in the Society, to register an expression as to the propriety of individual members using any form of alcohol, in the treatment of disease, was also killed, after a hot and somewhat acrimonious discussion.

The problems relating to the practice of Members of the Association, of electioneering before the meetings of the House of Delegates, was discussed and the attention of the House and of the Fellows and Members of the Association was drawn to the clause in the Constitution, prohibiting such direct and indirect methods of procedure.

Your Board of Delegates particularly desires to urge the members of the Wisconsin State Society to read the transactions of the governing body of their National Association, namely the acts of their representatives, for such perusal each year will be of great value to them, in giving them a much better understanding of the activities and administration of the most important medical body in the world: namely, the American Medical Association.

These transactions may be found in the Journal of the Association, of dates May 1st, 7th, and 15th.

All of which is most respectfully submitted,

Horace M. Brown, *Chairman.*
Charles Lemon,
Rock Sleyster.

President: Is there any discussion of that report? The next order is the report of the Delegate to Council on Medical Education.

The report of the Delegates to the Council on Medical

Education was presented by Dr. L. F. Jermain, Milwaukee, as follows:

REPORT OF DELEGATE TO COUNCIL ON MEDICAL EDUCATION.

To the House of Delegates, State Medical Society of Wisconsin.

GENTLEMEN:

The conference met in the Congress Hotel, Chicago, and was well attended.

The present status of medical education was discussed indicating that the number of medical students in the United States is again on the increase, having risen from 13,052 in 1919 to 13,554 in 1920 and that the low mark in the number of matriculants has been passed.

It was pointed out that the existing medical schools, with the completion of buildings already planned and under construction, and with additions to laboratories and staff of instruction, are adequate to meet the present needs of medical education in this country.

The American standard of medical education is to consist of:

(A) 2 years of Pre-Medical College work.

(B) 4 years in an acceptable Medical School.

(C) 1 year's interneship in an approved hospital, and is well on a par with that of other leading countries.

There are at present 86 Medical schools in the United States, 78 of which require 2 years of college work in addition to the 4 year high school education; 12 of these have adopted the requirement of a fifth year to be spent in an approved hospital or laboratory. Ten State Licensing Boards require an interneship as an essential qualification for license.

It was estimated that the hospitals in the United States, counting one interne for every 30 beds, would need 9,000 internes, more than three times the number of medical graduates available at this time. The interne problem therefore, is a serious one, the solution of which and remedy for which, lies in the hands of hospital authorities, rather than in the medical schools.

An attempt was made to give statistical proof that there is no shortage of physicians in this country but that the difficulty lies in faulty distribution rather than in insufficient numbers.

A report of the special committee on graduate medical education indicates that there is great need for such education and that graduate medical schools should be independent of under-graduate departments, with a separate faculty, adequate teaching hospitals and out-patient departments, clinical and research laboratories and that provision should be made in the curriculum for the graduate instruction of at least five distinct groups of students; these students to be grouped according to previous training, degree desired, special training desired, and the amount of time to be devoted to graduate study.

Stress was laid upon the importance of clinical facilities and clinical teaching in our medical schools, as the primary and most important function of the medical school is the training of competent practitioners of Medicine and Surgery, and that the average age of the medical graduate should be reduced by at least two years through a re-organization of intermediate and high school curricula. Many are of the opinion, however, that if such reduction is to be at the expense of cultural training of the medical student, it would be deplorable.

Respectfully submitted,

LOUIS F. JERMAIN, M. D.

PRESIDENT: Is there any discussion on that report?

PRESIDENT: We will now listen to the reports of the councilors of the various districts. The 1st District, Dr. Wilkinson.

SECRETARY SLEYSTER: Dr. Wilkinson will make his report on the organization work in that district later.

PRESIDENT: Dr. Wilkinson is not here, so we will have the report from the 2nd District, Dr. Windesheim.

SECRETARY SLEYSTER: Mr. President and Gentlemen: I received a letter from Dr. Windesheim yesterday, in which he told of his inability to be at the meeting.

PRESIDENT: The 3rd District, Dr. Nye.

The 4th District, Dr. Cunningham.

The 5th District, Dr. Zierath.

The 6th District, Dr. Abraham.

The report of the councilor of the 6th District was presented by Dr. H. W. Abraham, Appleton, as follows:

Mr. President and Gentlemen: The 6th District is in a very healthy condition. Practically all the men in the district who are eligible for membership are members of the Society. The number last year was 202, this year it is 205, a gain of 3.

The literary work in the meetings of the Society has not been as efficient in a way, because of the fact that the societies have neglected that side of the work in order to do the work in the lecture courses which have been substituted.

One county had regular meetings every month.

I presume the work done by the lecture course was equal to that of the literary work, although the men did not do as much work as they could do in that respect.

The district, as I say, is in a very healthy condition, and practically every eligible man in the district is a member of the Society.

PRESIDENT: The 7th District, Dr. Evans.

The 8th District, Dr. Redelings.

The report of the councilor for the 8th District was presented by Dr. T. J. Redelings, Marinette, as follows:

Mr. President and Gentlemen: The 8th District is about in its normal condition. The records show that we have lost two members, and our additions in new members offset most of those that we have lost. Our losses have been by death and removal.

The scientific activity of the societies is at a low ebb, so far as the members are concerned. We have replaced our former custom by employing some of the

lecturers of the University Extension Course. Personally I think this is an excellent thing, and unless we are able to continue it I am afraid it will be hard to provide work by the members. It would seem at least that it is going to be hard work to keep up the interest. Generally, I think the spirit among the men is excellent, and the societies in the district are in their usual prosperous condition.

PRESIDENT: The 9th District, Dr. Smith.

The report of the councilor for the 9th District was presented by Dr. Joseph Smith, Wausau, as follows:

Mr. Chairman and Gentlemen: In the 9th District, 3 of the counties show a loss, and 4 counties show a gain, the total being a gain of 9 members during the year. We have had one death and two removals. There are 15 delinquents.

As far as the scientific work of the Society is concerned, some of the counties have had meetings at more or less irregular intervals. The councilor district has had its quarterly meetings regularly throughout the year, as has been the case for a number of years.

PRESIDENT: Dr. Zierath is here, and we will now have the report of the councilor for the 5th District.

The report of the councilor for the 5th District was presented by Dr. W. F. Zierath, Sheboygan, as follows:

Mr. Chairman and Gentlemen: I just got in, Mr. President, and I have not brought my slip with me, but my district is in pretty good shape.

There have not been such a great number of medical society meetings, due to the fact that some of the counties have now established staffs in various hospitals, and are holding staff meetings to take the place of the County Medical Society meetings.

At the meetings which have been held, the attendance has been very good, and the work that has been done has been above the average.

The 5th District is in pretty good shape in regard to membership, and has few delinquents.

PRESIDENT: The 10th District, Dr. Cairns.

The 11th District, Dr. Dodd.

The report of the councilor for the 11th District was presented by Dr. J. M. Dodd, Ashland, as follows:

DR. J. M. DODD, Ashland: Mr. President and Gentlemen: The condition in the 11th District remains about the same as last year. At that time we had 106 members, and this year we have 99, a loss of 7. There are 13 delinquents, 3 removals, and 5 deaths. The deaths were Dr. Fletcher, of Ashland; Dr. Uren, who was formerly at Montreal, Iron Co., died in the West somewhere during the year; Dr. Tobey, formerly at Cable, Bayfield County, died at River Falls; Dr. Wilcox and Dr. Adams, of Superior, making the 5.

In a scientific way the principal work done during the past year was a series of clinics held by the Extension Division of the University of Wisconsin, and also a clinic held by the Wisconsin Anti-Tuberculosis Association. Those clinics were a very great assistance to the medical profession in the district, and were very much appreciated. I think they did a great deal of good.

PRESIDENT: The 12th District, Dr. Dearholt.

The report of the councilor for the 12th District was presented by Dr. Hoyt E. Dearholt, Milwaukee, as follows:

Mr. Chairman and Gentlemen: The 12th District consists just of the Milwaukee Society. They have to report a loss of two members, but the membership in this district changes so rapidly from day to day at this season of the year, that this may very likely be changed to a gain at the present time.

The affairs of the Milwaukee County Medical Society are going along very smoothly and prosperously, and are satisfactory from every point of view.

PRESIDENT: Is there anyone present to report on any of the districts that have not been reported on as yet this morning? If not, we will next hear the report of the treasurer, Dr. Hall.

The report of the treasurer was presented by Dr. S. S. Hall, Ripon, as follows:

TREASURER'S REPORT.

La Crosse, Wisconsin, Sept. 6, 1920.

S. S. Hall, Treasurer, in account with the State Medical Society of Wisconsin.

DEBTOR.

Balance on hand Sept. 30, 1919	$4,580.51
Received from Secretary for County Dues	3,896.50
Total	$8,477.01

CREDITOR.

1919			
Oct.	2—Rolla Cairns, Councilor's Expense	$ 70.70	
	18—Cannon Ptg. Co	60.50	
	L. C. Smith & Bros, Expense Secy	2.14	
	Cannon Ptg. Co., Expense Secy	3.50	
Nov.	3—J. Gurney Taylor, Exp. Child Welfare Conference	8.86	
	Rock Sleyster, Expense Secy	15.80	
	14—The H. H. West Co., Desk, Secy	27.50	
	22—Cannon Ptg. Co., Envelopes Secy	5.00	$ 194.00

1920			
Jan. 2	—Violet E. Coles, Clerical Services	$ 60.00	
21	—Rock Sleyster, Balance Assistant's Salary	15.00	
26	—Cannon Ptg. Co., Expense Secy	18.00	
Feb. 7	—The Globe Wernicke Co., Expense Secy	17.83	
12	—Dr. J. Rosholt, Refund Dr. M. R. Sathe	4.00	
	Dr. H. W. Morgenroth, Refund Dr. L. M. Johnson	2.00	
Mar. 5	—Rock Sleyster, Expense Secretary	7.00	
	Rolla Cairns, Expense Councilor	30.06	
	Siekert & Baum Sta. Co., Expense Secy	11.00	
	Cannon Ptg. Co., Expense Secy	17.00	181.89
Apr. 5	—The Wis. Medical Journal, Inserting Notice	$ 6.00	
	Violet E. Coles, Clerical Services, Secy	75.00	
	McDermott & Cowen, Account Stenographers	266.00	
19	—J. P. McMahon, Wis. Medical Journal	1,000.00	
May 5	—Rock Sleyster, Expense Postage	5.00	
	J. G. Taylor, Expense Madison, Health Committee	10.25	
10	—Siekert & Baum, Expense Secy	3.55	
June 2	—Rock Sleyster, Exp. Delegate A. M. A.—New Orleans	71.95	
	Horace M. Brown, Exp. Delegate A. M. A.—New Orleans	71.95	
25	—Dr. A. S. Loevenhart, Expense	52.85	1,562.55
July 6	—Violet E. Coles, Clerical Services, Secy	$ 75.00	
	Rock Sleyster, Expense Postage and Stationery	15.86	
Aug. 11	—Wis. Anti-Tuberculosis Asso., Crusaders 2 Years	200.00	
Sept. 3	—Rock Sleyster, Expense Postage	25.00	315.86
1920—			
Jan. 2	—Rock Sleyster, Salary, Oct., Nov., Dec., 1919	$ 150.00	
Apr. 5	—Rock Sleyster, Salary, Jan., Feb., Mar., 1920	150.00	
July 6	—Rock Sleyster, Salary, Apr., May, June, 1920	150.00	450.00
	S. S. Hall, Salary Year 1919-1920	$ 200.00	
	S. S. Hall, Incidentals	20.00	220.00
	Total		$2,924.30
	Balance		5,552.71
	Total		$8,477.01

Respectfully submitted,

S. S. Hall, *Treasurer.*

TREASURER'S REPORT, MEDICAL DEFENSE FUND.

La Crosse, Wis., Sept. 6, 1920.

S. S. Hall, Treasurer, in account with the State Medical Society of Wisconsin.

DEBTOR.

Balance on hand Sept. 30, 1919	$2,944.49
Received from Secretary for County Dues	3,431.50
Total	$6,375.99

CREDITOR.

1919			
Oct. 13	—Lines, Spooner & Quarles	$2,950.00	
1920			
May 17	—Lines, Spooner & Quarles	247.15	$3,197.15
	Total		$3,197.15
	Balance		3,178.84
	Total		$6,375.99

Respectfully submitted,

S. S. Hall, *Treasurer.*

Dr. S. S. Hall, Ripon: Mr. President and Gentlemen: In addition to this report, I will say that the bills up to date have just come in, and I have given Dr. Reineking a check for Lines, Spooner & Quarles, for the balance of the entire amount of that account, $2,696.35, which leaves up to date, the amount in the treasury for the Medical Defense Fund, $482.49.

This does not appear in the report, because this was done since the report was made out.

President: Gentlemen, you have heard the report of the treasurer. I understand the usual procedure is to refer the report to an auditing committee, and it will be so referred, and I will appoint on such committee Dr. Redelings, as chairman, Dr. Zierath and Dr. Dearholt.

I notice that Dr. Cunningham has come in, so we will have the report of the councilor of the 4th District.

The report of the councilor of the 4th District was presented by Dr. Wilson Cunningham, Platteville, as follows:

Mr. President and Gentlemen: There is nothing to add to the report as issued. The conditions in the district have been about the same as last year, and the work is going on in the usual way.

President: Dr. Evans will present the report for the 7th District.

The report of the councilor for the 7th District was presented by Dr. Edward Evans, La Crosse, as follows:

Mr. Chairman and Gentlemen: The 7th District report shows 122 members last year, and 115 this year, a loss of 7, with 4 delinquents, and 12 removals. There were 4 deaths, and 12 new members.

The work in the 7th District is proceeding much better than in the past. Trempealeau-Jackson-Buffalo, which was the hardest county society to get good action on, because of the scattered condition of the members, has been doing splendidly, and they are alive and doing good work.

I think the district as a whole has been doing better work this year, and I know that La Crosse County has.

President: Have any of the other councilors come in from the districts which have not yet reported? Did you make a report, Dr. Evans, as chairman of the Council?

The report of the chairman of the Council, Dr. Edward Evans, La Crosse, was presented as follows:

Mr. Chairman and Gentlemen: There really has not been a great deal going on this year. We have been corresponding with the councilors in the various districts trying to get them to stimulate their county secretaries to get into the game again after the war, and I think they have been doing pretty well along that line. Most of the councilors that I have communications from, and whom I have met personally, say that the work is getting better again, and that they are showing a better spirit. I think that this is largely brought about because of the tremendous stimulus found in group medicine brought about by the war. Better work is being done in the state, I think, because of the grouping of men, the establishment of small clinics, where there is opportunity for better work. I think that is perhaps the most interesting thing there is to report as chairman of the Council. This change has been taking place very rapidly, and I think on the whole with very good effect.

President: We will now hear the report of the secretary, Dr. Sleyster.

The report of the secretary was presented by Dr. Rock Sleyster, Wauwatosa, as follows:

REPORT OF THE SECRETARY FOR THE PERIOD FROM JANUARY 1 TO SEPTEMBER 1, 1920.

To the House of Delegates:

From an organization standpoint, there have been no changes of importance during the past year. Fifty-four county societies have, as usual, remitted for their members, and all counties in the State are organized with the exception of Marquette County.

The total number of 1861 paid 1919 dues, an increase of 27 over 1918, and the largest membership the State Society has ever enjoyed. Approximately 75 per cent of the licensed physicians of the State and, with few exceptions, all of the eligible and desirable practitioners of the State are affiliated with us. Compared with other state organizations, we continue the best organized of the western states, and no state having as large a number of physicians has as large a percentage as members of its state medical society.

The incomplete report for the year 1920 follows: In comparing the tables of previous years with that of 1920, it should be remembered that the 1920 report covers a period of eight months only, while those for 1919 are for the entire year. The four remaining months of 1920 will materially affect the conditions shown. The attached tables show the 1919 membership complete, the 1920 membership to September first, the losses and gains, the number of delinquents, the deaths, removals and new members for each county and for each district in the state.

STATE MEDICAL SOCIETY OF WISCONSIN.

MEMBERSHIP REPORT.

September 1, 1920.

County Society. 1st District—	1919	1920	Loss — Gain +	Delinquent	Removals	Deaths	New Members
Dodge	32	34	+2	2	2	0	5
Jefferson	33	31	—2	2	0	0	0
Washington	14	11	—3	1	2	0	0
Waukesha	43	44	+1	1	0	0	0
	122	120	—2	6	4	0	5

2nd District—							
Kenosha	38	39	+1	2	0	0	3
Racine	47	46	—1	3	0	1	3
Walworth	27	15	—12	12	1	1	2
	112	100	—12	17	1	2	8
3rd District—							
Columbia	30	28	—2	4	0	0	2
Dane	111	108	—3	8	5	1	10
Green	21	21	0	0	0	0	0
Rock	69	70	+1	2	3	0	5
Sauk	15	27	+12	0	0	0	11
	246	254	+8	14	8	1	28
4th District—							
Crawford	6	5	—1	0	1	0	0
Grant	41	40	—1	3	0	1	2
Iowa	10	12	+2	1	0	0	3
Lafayette	20	12	—8	8	0	0	0
Richland	19	16	—3	3	0	1	1
	96	85	—11	15	1	2	6
5th District—							
Calumet	16	17	+1	1	0	0	2
Manitowoc	33	32	—1	3	0	0	2
Ozaukee	10	9	—1	0	1	0	0
Sheboygan	45	40	—5	6	1	0	1
	104	98	—6	10	2	0	5
6th District—							
Brown-Kewa'nee	40	46	+6	2	0	0	7
Door	9	9	0	0	0	0	0
Outagamie	37	34	—3	2	1	0	1
Fond du Lac	58	57	—1	4	0	0	3
Winnebago	58	59	+1	0	2	0	4
	202	205	+3	8	3	0	15
7th District—							
Juneau	12	10	—2	1	1	0	0
La Crosse	47	47	0	1	6	2	9
Monroe	19	18	—1	0	1	0	0
Trempealeau J. B.	27	24	—3	2	2	1	1
Vernon	17	16	—1	0	2	1	2
	122	115	—7	4	12	4	12
8th District—							
Marinette F.	26	20	—6	4	2	1	1
Oconto	9	13	+4	1	0	0	4
Shawano	19	19	0	0	1	0	1
	54	52	—2	5	3	1	6
9th District—							
Clark	8	12	+4	0	0	1	1
Green Lake W.A.	25	20	—5	7	1	0	3
Lincoln	15	13	—2	3	0	0	1
Marathon	31	41	+10	1	0	0	7
Portage	20	22	+2	2	0	0	2
Waupaca	31	32	+1	1	0	1	3
Wood	24	23	—1	1	1	0	1
	154	163	+9	15	2	2	18
10th District—							
Barron P.W.S.B.	39	37	—2	3	1	0	2
Chippewa	21	20	—1	4	0	0	2
Dunn-Pepin	20	19	—1	2	1	0	2
Eau Claire	38	36	—2	5	1	0	3
Pierce	7	9	+2	0	0	0	2
Rusk	8	7	—1	2	0	0	1
St. Croix	17	15	—2	3	0	0	0
	150	143	—7	19	3	0	12
11th District—							
Ashland B. I.	25	20	—5	7	0	0	2
Douglas	40	40	0	1	1	1	3
Langlade	14	14	0	1	1	0	2
Oneida F. V.	13	12	—1	1	1	0	1
Price-Taylor	14	13	—1	3	0	0	1
	106	99	—7	13	3	1	9
12th District—							
Milwaukee	393	391	—2	39	4	1	20
Totals	1861	1825	—36	165	46	13	144

DIGEST OF TABLES.

Three districts show a gain—the ninth, 9; the third, 8; and the sixth, 3.

Nine districts show a loss—the second, 12; the fourth, 11; the 7th, 10th and 11th, 7; the fifth, 6; and the first, eighth and twelfth, 2 each.

The twelfth district has 39 delinquents; the second, 17; the tenth, 19; the fourth and ninth, 15; the third, 14; the eleventh, 13; the fifth, 10; the sixth, 8; the first, 6; the eighth, 5; and the seventh, 4.

The third district has 28 new members; the twelfth, 20; the ninth, 18; the sixth, 15; the seventh and tenth, 12; the eleventh, 9; the second, 8; the fourth and eighth, 6; and the first and fifth, 5.

Fifteen counties show a gain; 33 show a loss; and 6 remain the same.

Sauk shows the greatest gain, with a gain of 12; Marathon comes next with a gain of 10; then Brown-Kewaunee with a gain of 6, and Oconto and Clark with a gain of 4 each.

The greatest loss is Walworth County, with a loss of 12; then comes Lafayette County with a loss of 8; then Marinette with 6, and Sheboygan, Green Lake W. A. and Ashland with a loss of 5 each.

Eleven counties have no delinquents. The following counties show the largest number of delinquents: Milwaukee, 39; Walworth, 12; Dane, Lafayette, 8; Green Lake W. A. and Ashland, 7; and Eau Claire, 5.

Forty-three counties report 144 new members. Honors go to Milwaukee which reports 20 new members; Sauk, 11; Dane, 10; La Crosse, 9; Brown-Kewaunee and Marathon with 7 each.

Total membership, Dec. 31, 1917	1836
Total membership, Dec. 31, 1918	1834
Total membership, Dec. 31, 1919	1861
Total membership, Sept. 1, 1920	1825
Delinquents, Dec. 31, 1918	78
Delinquents, Dec. 31, 1919	78
Delinquents, Sept. 1, 1920	165
Deaths and removals, Dec. 31, 1918	69
Deaths and removals, Dec. 31, 1919	53
Deaths and removals, Sept. 1, 1920	59
New members, Dec. 31, 1918	105
New members, Dec. 31, 1919	113
New members, Sept. 1, 1920	144

The membership report given above is again encouraging. Notwithstanding repeated predictions the last few years that we must inevitably have a falling off in membership, it shows a steady and wholesome growth which is again convincing of the loyalty of the profession to organized medicine. Much of the credit should again be given to the county secretaries and to them we are all indebted, few of us realizing, I fear, the drudgery of their work and the constant effort necessary on their part.

STATE ACTIVITIES.

The Handbook mailed to you about two weeks ago contains the reports of the various committees and tells of many of the activities of the Society. These reports will be read before this session of the House and do not require other attention.

It is necessary for me, however, to emphasize the greatly increased expenditures of the Society, which are almost wholly due to increased publication costs. You will note in the report of the publication committee that it is estimated the increased printing costs of the Journal for the coming year will amount to approximately $3,000. All of the activities of the Society practically depend on publicity through printed matter, and the increases in the cost of labor, paper and other material has brought our necessary expenditures far above the amount received by a collection of two dollars per year as annual dues for each member.

You will also note in the report of the Committee on Medical Defense that it is estimated the annual cost of defending our members will be about $2.50 per member, as compared with $2.00 per member in the past. Facing these increases in the cost of operation in all our departments, it is apparent that to continue our activities on even the same scale which we have in the past, it will be necessary for us to raise an additional two dollars per member each year. This will give us approximately $3,800 and will require raising the dues fifty per cent, or from four to six dollars. Such a raise in dues compares favorably with other increases in the cost of living and I feel sure our members can make no valid objection to it. The only other solution of the problem would be to suspend the publication of our Journal.

It will be necessary for the present House of Delegates to give this matter careful consideration, and if in their opinion the Society is to carry on its present activities, even without increases, the raise in dues recommended requires the action and authorization of the House.

You will also note on page 22 of the Handbook the recommendation of your Committee on Hospitals that a competent person be secured to make a hospital survey of the State. To follow this recommendation, I fear would require the further raising of dues, as the two dollar increase recommended will scarcely more than take care of the increased costs in publication and the defense of our members in malpractice suits. Several other state societies are, however, charging annual dues ranging from ten to twenty-five dollars per year, and the present House may find it practicable to advance the dues to a point where the activities of the Society will not be hampered by an empty treasury. My recommendation, however, would be to advance the dues to a point which will take care of our nominal expenditures for the coming year and the appointment of the Council or a special committee to study and advise on the question of a further raise in dues, reporting back to the House at the next annual meeting.

SEVENTY-FIFTH ANNIVERSARY.

The 1921 meeting of the State Medical Society will mark the 75th birthday of the organization. It is only fitting that the occasion be celebrated with a birthday party which will do honor to a society which has accomplished so much for the State of Wisconsin in three-fourths of a century of usefulness. Preparations for the event should be begun immediately after the close of this meeting and the time to begin discussion as to how the event should be celebrated is now.

This subject brings up the question of our relationship with the Tri-State District Medical Society which meets in Waterloo, Iowa, in October of this year. Prior to this year, the Tri-State District Society has met during the month preceding our meeting and it has been felt by the Council and officers of your Society that a closer affiliation with that organization was impossible as long as their meetings in any way worked to the detriment of our own organization. They will probably come to Wisconsin during the fall of 1921. It is obviously impractical to attempt to hold two large medical meetings in Wisconsin within a few weeks of each other. Neither the Iowa nor Illinois State Societies have ever officially recognized this new organization and it is in no way an integral part of the great scheme of organization of the American Medical Association.

It is felt that the first allegiance and loyalty of each and every member should be to his county and his state organization. The question arises, however, as to whether it is advisable to work for a joint meeting with this organization in 1921 or to hold our meeting independently, even risking our attendance, due to the fact that the outside organization will no doubt hold a meeting in this State within a few weeks of our own.

This is a question which, I think, properly comes before the House of Delegates and should be decided by them.

HISTORICAL RESEARCH.

The last House of Delegates authorized the publication of a history of Wisconsin medicine and appropriated for the purpose the sum of five hundred dollars. Responsibility for this work has been assumed by Dr. William Thorndyke of Milwaukee and it is hoped the history may be completed and published as a memorial of our 75th anniversary. Dr. Thorndyke will, no doubt, ask the co-operation of many of our members in securing information needed for the work and I beseech your hearty co-operation in anything he may ask of you.

POSTGRADUATE MEDICAL TEACHING.

You will all recall that at the last Madison meeting of the State Society, a resolution was passed asking the Board of Regents of the University to establish postgraduate medical teaching in connection with the Extension Division of the University of Wisconsin. An appropriation from the legislature was secured to begin this work and it has been carried quite successfully each year.

During 1920, a course of clinics and lectures has been given in Fond du Lac, Oshkosh, Sheboygan, Appleton, Wausau, Superior, Ashland, La Crosse, Eau Claire, Marinette, Stevens Point, and a joint course for the cities of Berlin, Ripon, Princeton and Green Lake. Over three hundred members of the Society have attended these courses and with few exceptions have indicated their appreciation of what the University is trying to do in bringing the newer developments of scientific medicine to the man in the field.

In addition to these lecture courses, the Extension Division has collected a complete set of anatomical models and a large number of films and lantern slides on medical and public health subjects, which are now available and will be loaned without cost to physicians, medical societies, nurses' training schools, public health organizations, public schools, etc. I will be glad to furnish anyone interested with a printed list of these models, films and slides.

Courses will again be given during the year 1921 with the old and several new lecturers and a complete change of subjects.

Postgraduate teaching has been made available at the request of this organization. It is yours for the asking and with your support, the University is confident that a larger appropriation can be secured to further the splendid start already made.

In closing, let me remind you as I have every year that the activities of the organization are in no way confined to an annual meeting. The officers and committees which you elect are working in your interests and in the interests of the people of Wisconsin every day of the year. They are *your* officers and *your* committees. This is *your* Society and *your* Journal. They are owned and supported by you so make good use of them. They are always at your service.

And now may I call your attention to the quotation from Roosevelt printed on our program. "Every man owes some of his time to the upbuilding of the profession to which he belongs." Your degree and your membership in this organization brings with it a responsibility in medical affairs, and that responsibility begins with your county society. You owe it your loyalty, your support and your regular attendance. It is unnecessary for me to again remind you that the Secretary's office is open 365 days a year and is always at your service.

Respectfully submitted,

ROCK SLEYSTER,

Secretary.

PRESIDENT: Gentlemen, you have heard the report of our secretary. It is to be referred to this new committee on Reports and Resolutions, as there are a number of suggestions which may call for resolutions to be presented later to the House of Delegates.

We will now go back to No. 7, which we passed owing to the rather small attendance at the opening of the meeting of the House of Delegates, the election of a committee of 12 on nominations, one from each district.

SECRETARY SLEYSTER: Mr. President, it has been customary in the past to call the counties in each district, and then ask the House to nominate a man from one of those counties. I would suggest that as I call the counties of the district, that the different men who live in the district, stand, so that we can see who is here.

The following Committee of 12 on Nominations was elected from the floor by the House of Delegates.

1st District—Dr. A. E. Bachhuber, Mayville.
2nd District—Dr. L. E. Fazen, Racine.
3rd District—Dr. C. A. Harper, Madison.
4th District—Dr. J. C. Betz, Boscobel.
5th District—Dr. W. F. Zierath, Sheboygan.
6th District—Dr. F. G. Connell, Oshkosh.
7th District—Dr. C. F. Peterson, Independence.
8th District—Dr. T. J. Redelings, Marinette.
9th District—Dr. Joseph Smith, Wausau.
10th District—Dr. W. H. Parks, Glenwood.
11th District—Dr. L. A. Potter, Superior.
12th District—Dr. W. E. Grove, Milwaukee.

DR. T. J. REDELINGS, Marinette: Mr. President, if there is any question about my right to act on this committee, I might say that I think my term as councilor expires. I do not know that that has anything to do with it.

PRESIDENT: Does it expire at this time?

DR. REDELINGS: I think so.

PRESIDENT: You are the only one from your district?

SECRETARY SLEYSTER: Dr. Redelings will probably

be excused from the room until the committee acts on his district.

This committee, according to the constitution and by-laws will bring in its report on the nominations for officers at the session of the House of Delegates tomorrow morning, and it would be well, I think, for the president to appoint a chairman of the committee, one who can get the committee together some time today, so that they may be prepared to make their report tomorrow.

PRESIDENT: I will appoint Dr. Joseph Smith as chairman of that committee. The committee consists of Drs. Bachhuber, Fazen, Harper, Betz, Zierath, Connell, Peterson, Redelings, Smith, Parks, Potter and Grove. I suggest that the committee get together when we adjourn tonight, and decide when to meet and consider these matters.

SECRETARY SLEYSTER: The next order of business pertains to the election of committees and delegates. The House of Delegates has sometimes referred the matter of these committee elections to the Nominating Committee, and at other times they have been elected from the floor.

DR. WILSON CUNNINGHAM, Platteville: Mr. President, I move that the nominations of the committees be referred to the Nominating Committee.

Motion seconded.

Motion put and carried.

PRESIDENT: The motion is carried. The next order of business is Miscellaneous and New Business.

DR. JOSEPH SMITH, Wausau: May I ask a question? Is it understood that this Nominating Committee is also to make nominations for councilors in the 7th and 8th districts? Is that part of their duty?

PRESIDENT: I think so.

SECRETARY SLEYSTER: Unless Dr. Redelings would rather have them elected from the floor here today.

DR. T. J. REDELINGS, Marinette: Yes, I would be very glad of that.

SECRETARY SLEYSTER: It would probably relieve Dr. Redelings from an embarrassing position if the councilors were elected from the floor today, and the balance of the matter referred to the Nominating Committee.

PRESIDENT: We will then take up the election of councilor from the 7th District to succeed Dr. Evans, and for the 8th District, to succeed Dr. T. J. Redelings. Nominations are in order for a successor to Dr. Edward Evans as councilor for the 7th District.

DR. A. E. BACHHUBER, Mayville: Mr. President, I nominate Dr. Edward Evans to succeed himself.

Nomination seconded.

Nomination put to a vote and carried.

PRESIDENT: Dr. Edward Evans is elected councilor for the 7th District to succeed himself.

Nominations are now in order for councilor for the 8th District.

DR. S. E. WILLIAMS, Chippewa Falls: Mr. Chairman, I should like to nominate Dr. T. J. Redelings, of Marinette, to succeed himself as councilor for the 8th District.

Nomination seconded.

Nomination put to a vote and carried.

PRESIDENT: Dr. Redelings is elected councilor for the 8th District to succeed himself.

What further business is there to come before the House of Delegates this morning?

SECRETARY SLEYSTER: There is an accumulation of communications here which I might read. I have here a resolution which has been sent in by the Ohio State Medical Association, with the suggestion that the House of Delegates of our Society consider it. I think it would be well to state the purpose of it and then refer it to the Committee on Reports of Officers. It pertains to uniform registration laws in the different states.

The resolution is as follows:

1. *Whereas,* In our forty-eight states there are as many separate medical examining boards, and

2. *Whereas,* Licensed physicians in one state may not always practice in other commonwealths without vexatious examinations and expense, and

3. *Whereas,* The practice of medicine is uniform throughout the length and breadth of the land;

Therefore, Be It Resolved, That it is the opinion of the House of Delegates that the right to practice in one state should be extended to include the right to practice medicine in any part of the United States.

Be It Further Resolved, That a copy of this resolution be sent to the proper officials of all medical societies, and to national and quasi-national medical associations, and that the American Medical Association be especially urged to perfect a plan by which interstate medical practice may be made a reality.

SECRETARY SLEYSTER: I move that this resolution be referred to the Committee on Reports of Officers.

PRESIDENT: It will be so disposed of unless there is objection.

SECRETARY SLEYSTER: I have also two communications from Dr. Green, secretary of the Council on Health and Public Instruction of the American Medical Association, which I wish to read to you.

The following letters were then read by Dr. Sleyster:

535 North Dearborn St., Chicago, May 24, 1920.

Dr. Rock Sleyster,
Wauwatosa, Wisconsin.

Dear Dr. Sleyster:

At the New Orleans meeting of the American Medical Association, the House of Delegates adopted a recom-

mendation of the Reference Committee that the work of the Subcommittee on Health Problems in Education be endorsed and that the Secretary of the Council on Health and Public Instruction be instructed to ask the secretary of each state association to have a committee appointed to attend the next meeting of the State Teachers' Association and to ask for the appointment of a committee from the State Teachers' Association to co-operate with the medical profession in promoting better health conditions in our public schools.

In accordance with this action, I would suggest that your state association at its coming meeting be asked to authorize the appointment of a committee of three members for this purpose. If this suggestion meets with the approval of your state association, I shall be glad to write the chairman of the committee giving him further details on this subject if you will kindly notify me of his appointment.

Very truly yours,
FREDERICK R. GREEN,
Secretary,
Council on Health and Public Instruction.

FRG:HN

535 North Dearborn Street, Chicago, June 18, 1920.
Dr. Rock Sleyster,
Wauwatosa, Wisconsin.
Dear Dr. Sleyster:

Regarding the Committee to co-operate with your State Teachers' Association of which I wrote you on May 21, after consultation with Dr. Dodson, Chairman of the Committee on Health Problems in Education, I would suggest the desirability of appointing a committee of five members from each state to consist of one public health officer, one pediatrician, one ophthalmologist and two general practitioners, preferably from the small towns or rural districts of your state who are interested in educational administration or who have served on the boards of education for their town or district. The three specialist members would naturally be selected from the larger cities. This plan would insure a committee on which the different activities of the medical profession pertaining to health problems in education would be represented.

This suggestion is for your consideration and to secure uniformity in the selection of these committees. I shall appreciate it if you will kindly bring this matter to the attention of your president for consideration when the committee is made up.

Very truly yours,
FREDERICK R. GREEN,
Secretary,
Council on Health and Public Instruction.

FRG:EM

SECRETARY SLEYSTER: I move that the President of the Society be authorized to appoint such a committee to co-operate as requested.

PRESIDENT: Would it not be well for the Committee on Nominations to take that matter up?

SECRETARY SLEYSTER: He asks for the appointment by the President.

Motion seconded.

PRESIDENT: Is there any discussion of this motion before it is put?

(Motion put and carried.)

SECRETARY SLEYSTER: This is a communication from Dr. Colwell, secretary of the Council on Education of the American Medical Association.

Dr. Sleyster then read the following communication:

535 North Dearborn Street, Chicago, May 15, 1920.
Dr. Rock Sleyster, sec.,
State Medical Society of Wisconsin,
Wauwatosa, Wis.
Dear Dr. Sleyster:

The work for the betterment of hospital service is extremely broad and will require continuous effort, so that the hospital committee in each state should be made permanent. Would it not be well to have your committeemen appointed so that the term of office of one member will expire each year and also to make provision for the prompt filling of all vacancies that may occur through the death, resignation or removal of any member?

You doubtless recognize the importance of retaining on this committee men who are not only active, but who also are in a position to prepare the most unbiased and reliable reports in regard to the hospitals of the state.

Appreciating your co-operation, we are

Very sincerely yours,
COUNCIL ON MEDICAL EDUCATION AND HOSPITALS,
Per N. P. COLWELL,
Secretary.

AR

SECRETARY: I move, Mr. President, that this committee be made a permanent committee; that the president reappoint the present members, designating the length of terms they shall serve, the chairman serving for 5 years, and the next for 4 years, the next for 3, the next for 2, and the last for one year, and that in case of vacancies on the committee the president be authorized to fill the same.

Motion seconded.

Motion duly put and carried.

SECRETARY SLEYSTER: We have another resolution sent in by the Treasury Department of the United States Government, which pertains to thrift saving. This can be referred to that very committee.

I think that is all.

DR. JOSEPH SMITH, Wausau: Mr. President, there is one matter that I should like to speak of. I do not know whether it really belongs in this meeting of the House of Delegates, or in the meeting of the Council.

It has been apparent from the secretary's report that the development of post graduate teaching throughout the state in the several districts has, to some extent, interfered with the meetings of the County Society, and I predict that as that development goes on, and as the

development of hospital staffs proceeds, that the county societies will have increasing difficulty in holding meetings. I am wondering whether or not the House of Delegates, or the Council, should endeavor to stimulate the holding of meetings by the county societies, in the face of this movement, or not. I think this is a problem that we shall have to consider in the near future.

PRESIDENT: This is a very important question that Dr. Smith has brought up. It would be unfortunate if our attempted post graduate instruction were to take away the initiative on the part of the members of the profession. It is a bad thing to become a sponge, and this is an important thing to consider. Could you suggest any specific way to get at the problem?

DR. JOSEPH SMITH, Wausau: As an illustration, I may say that in our county, when we had our post graduate course, the meetings were held instead of the regular meetings of the County Society. Now I do not know how generally that movement has been carried out throughout the state, but I imagine rather generally, and I would like to hear from the other districts, especially the councilors, as to what the effect is in their respective districts and the counties throughout the state. I am not sure as to how general this movement is, but in our district it seems to be the tendency for the District Society meetings and the post graduate courses to take the place of the county society meetings, and it is getting to be more and more difficult to get the county societies to hold meetings in the face of these other increasing activities.

PRESIDENT: Do those attending the meetings take as active a part as they would if attending the ordinary county society meeting?

DR. JOSEPH SMITH, Wausau: Yes, I think they do. The average man in the county society is a very difficult man to get to write a paper, for instance. It is very difficult to get men in the local organizations to write papers or participate in the programs, but it is not a difficult thing to get him to come to the post graduate course, or come to the district meeting, when somebody else presents the subject matter. It is an increasing difficulty that we are going to have to face in the county societies.

PRESIDENT: It would seem to me that the important thing is to maintain initiative on the part of the various members of the profession, as far as that is possible.

DR. JOSEPH SMITH, Wausau: The question in my mind is that we have to consider which is the more valuable line along which to proceed, and whether or not it is going to be possible to maintain any degree of regularity in county society meetings in the face of this other movement.

DR. C. A. HARPER, Madison: Mr. President and Gentlemen: It was stated here this morning that the hospital staffs are holding reasonably regular meetings and in some instances the County Societies are not holding the county meetings with any degree of regularity. It appears to be perfectly proper that this body should give consideration as to its effect upon the County Societies.

I personally feel that the County Societies should be made the basis of getting the medical men together at all times. The post graduate meetings of which Dr. Smith speaks, and also a representative of one of the districts, implies that the hospital staff meetings are taking the place of the County Society. This in my judgment tends to lessen the interest in the county meetings and therefore it materially affects the attendance.

There are many good medical men in each county who, on account of their location, are not members of any hospital staff. The county meetings furnish a gathering place for these men, and hence the County Society meetings should be well attended and furnish the nucleus of getting together all medical men in the county.

DR. JOSEPH SMITH, Wausau: May I just add one other word? In our district, I will say that we have attempted to counteract that movement, in so far as possible, by having our county society meeting with the post graduate meeting, but always arranged to have one or two papers by local men in connection with the post graduate lecture, whatever that happens to be. We have found that this plan works very well, and our reason for holding the meetings this way was that unless something was done we would lose entirely the identity of the county organization.

PRESIDENT: That seems a good solution. Gentlemen, I would like to hear further suggestions.

DR. H. W. ABRAHAM, Appleton: Mr. Chairman and Gentlemen, we have had three courses in the counties of Fond du Lac, Winnebago and Outagamie. This district also includes Green Bay and Door-Kewaunee. I have looked into the matter a little bit in my inspection of the district, and in consulting with the secretaries especially, and some of the members, I found that the same conditions were true of the three counties which I mentioned, Fond du Lac, Winnebago and Outagamie, that the average attendance of the post graduate courses was a little over one-half of the registration. The general opinion was that they were enthusiastic over the lectures. There were some objections, of course, but the preponderance of opinion was that these counties had had no meetings of the county societies as they used to; that is, the course of lectures took the place of these meetings, and it did not bring out the local interest that the regular meetings and discussion of local papers would bring out. I think it is too bad that the local interest should run down in any degree because of this postgraduate work, as it is very necessary to keep up the local interest. I think that the suggestion of Dr. Smith that the lectures should probably not come quite so often, is a good one, and then there should be some local men in addition, to read papers and enter into the

discussions. From that point of view the problem might be worked out satisfactorily, although it is an experiment. In Brown-Kewaunee, where they had no course of lectures, the regular meetings were held every month, and the reports have been that they were quite enthusiastic, and the meetings were better than they had had in previous years. That is the report as I get it from the men themselves.

Dr. Edward Evans, La Crosse: Mr. Chairman and Gentlemen: I can only speak of the local conditions here. At the hospital I am connected with here, we have a well organized staff, and that staff is a more autocratic organization than the County Medical Society, and we there insist on regular attendance and every member of the staff taking part in his turn in the presentation of cases, and that sort of work. We have, however, insisted that it shall not in any way interfere with the County Medical Society. And in a place like this, where we have more than one hospital, I think it is going to be a great stimulus to the County Society meetings. I do know this, that our organized staff are the best attendants at the County Society meetings. I believe it is going to have a very healthy effect on the county meetings. We make it a point that our staff meeting does not occur at any time that will interfere in any way with the County Society meeting, and I know that the staff is enthusiastic in its endeavor to keep the County Society going. I think it would be very unfortunate indeed if anything occurred that would interfere with the county medical societies. But a group of men attending a certain hospital, get together and get their interest stimulated, and their cases better worked up, so that they will be in a position to better present them at the county meetings, and it seems to me would have nothing but a good effect on the County Medical Society attendance and work. I think that has been the effect here.

President: Is there further discussion of this subject?

Dr. S. E. Williams, Chippewa Falls: Mr. President and Gentlemen: I would just like to mention a little experience in our local district, which would be along the same line as that Dr. Evans has mentioned. I do not believe that the staff meeting should consume the county society, nor that the county society should consume the staff meeting. We tried both ways. We thought that maybe a very interesting staff meeting would bring all the members out, but it failed to do that, and especially with some of the men that are a little ways distant from the hospital, and are not so accustomed to frequenting the hospital as the members of the staff. They looked at it as rather a picked idea of the members of the staff to put forth their ideas, and ignore the rural man. I think from our little experience that we should encourage the county meeting. The county meeting will bring all the members out, because they all feel that they belong to that. As far as the staff meetings are concerned, it has been our experience that it has been hard to get any men in except those working in the hospital every day.

President: Is there further discussion of this subject?

Dr. C. A. Harper, Madison: Mr. President and Gentlemen: I think, however, that the solution of the proposition rests largely in the attitude that the staff men take. If they insist that the members of the hospital staffs attend the county medical society meetings, and see to it that they do attend them, at least to a reasonable extent, then the County Medical Society unit will be safeguarded.

This suggestion comes to my mind as a result of a report that in some one of the districts of the state the staff meetings, had, so-to-speak, taken the place of the County Medical Society meetings, which I think is a serious matter and dangerous as far as the success of the County Medical Societies is concerned.

President: Is there further discussion of this question? I think there is no resolution before the House. If anyone desires to offer anything in the form of a resolution, I will be very glad to hear it.

Dr. A. E. Bachhuber, Mayville: Mr. Chairman and Gentlemen: I can speak as secretary of a county society. Now our county has no hospital with an organized staff, and last year I tried to organize a course of lectures to take the place of the county society meeting; hold them just as the County Society meetings are held, but instead of taking the local men to work up the papers, the plan was to have the postgraduate men give the course. I failed to get enough subscribers to put it through but I think that in the coming year that could be arranged. The plan of having the postgraduate work instead of the local work has always appealed to me.

President: Is there further discussion? If not, is there any other business to be brought up this morning? If not, a motion to adjourn is in order.

Dr. S. E. Williams, Chippewa Falls: Mr. President, pardon me for interrupting, but I was just talking with Dr. Redelings, and inquiring if this body has ever taken any definite action on the liquor proposition. I do not know as this is the right place to bring the matter up, but I understand that some proposition is going to be brought before the Minnesota Medical Society meeting at their coming session, and I know from the situation as it has been in our locality that there has been some unpleasantness. There are only 5 men in our county that are using the whiskey prescription, and the rest of the men in the county have taken a decided stand against it. I was just wondering if it would not be worth the effort if the Chair would appoint a committee of 2 or 3 to look into this matter as it is now being used throughout the state, because I believe that lots of doctors are being whipped into line and being made regular bartenders. In our locality at the present time it is a shame. There is more drunkenness among certain classes of men in our locality than ever before,

and there is no one to blame but our weak back-boned physicians. And I believe, as our county asks leave to bring this matter before you, that the State Society should take some definite stand on this proposition. During the war our locality got along without a drop of whiskey, and we found out that our hospital got along better, and that we got just as good results as we ever did, and no drunkenness. I believe, and a number of the men there believe, that the state ought to take some definite action on this promiscuous use of prescriptions and physicians abusing the right that the Government has placed in our hands. Some of us feel that the Government has, as they say in the Army, "passed the buck" to us, and it has brought about disrespect by the general laxity of the physician. I should like to hear some of the other delegates express their opinion on the matter, and would particularly like to hear from Dr. Evans on this matter.

PRESIDENT: Do you wish to offer any resolution on this matter?

DR. WILLIAMS: I would prefer to have a little discussion of the matter first, from some of the men that have had more experience.

DR. EDWARD EVANS, La Crosse: Mr. Chairman, while the doctor was speaking, I wondered, inasmuch as the Council is the Board of Censors of the State Medical Society, if it would not be a good idea to refer the matter to the Council and let them bring in such resolutions or suggestions as they may see fit for the House of Delegates tomorrow, before referring it to the whole meeting. What do you think, Mr. President?

PRESIDENT: Do you mean refer it to this Committee on Resolutions to bring in a resolution?

DR. EVANS: Yes, we will refer it to that committee.

DR. T. J. REDELINGS, Marinette: Mr. President, it occurs to me that it would be very wise to get the sentiment of a larger number before this matter is referred to a smaller body. I wish to second what Dr. Williams has said just now. It seems to me that we are cheating ourselves, and that this matter has become a stumbling block to the men of lesser character, who have lent themselves to a vicious business. In our community I think there are 5 out of 13 who are writing this whiskey prescription. It is a very easy matter to decline to do that if you haven't the prescription at all; that is the easiest way out. Certainly this great and noble profession should not lend itself to thwart one of the grandest things that has ever come to us as a people.

DR. S. E. WILLIAMS, Chippewa Falls: Mr. President and Gentlemen: My idea was simply to bring about a discussion, as Dr. Redelings has said, and get the opinion of some of the men here, before we load the matter onto this committee. It looks to me as if that committee already has a man-sized job on its hands, and I believe that our chairman ought to be authorized to appoint a committee in addition to that committee already appointed, to talk this matter over and report some definite action to this body before we finally adjourn.

PRESIDENT: Do you make a motion to that effect?

DR. S. E. WILLIAMS, Chippewa Falls: Let the discussion go on, and let us hear from some of the others present. There are two standards. I do not believe that all the physicians who are writing whiskey prescriptions are malicious or bad. There are some men who believe that it is absolutely necessary to have the power of writing prescriptions for whiskey. I know that, because I personally know some conscientious men who believe that in some cases they have got to have whiskey. Personally I do not believe that any patient at any time should have whiskey, and I have got to be shown where it will produce results over other things which we have at hand; but still there are those conscientious men who believe in the whiskey prescription, and we have got to give them a fair shake and justification for so doing. On the other hand, we have a lot of malicious fellows that have no backbone, that are doing this simply for the remuneration there is in it.

Now there are two sides to this proposition to be considered, and that is why I do not think we ought to pass any resolution before the matter is thought over very seriously. As I understand, this proposition is to be brought before the Minnesota Society meeting at St. Paul, and I think that it is worthy of some discussion, because if we men here in this body take some definite stand, it is going to help the fellow on crutches, with the weak backbone, to take some vigorous stand.

We are so located at Chippewa Falls that at this time of the year we are in a bad position. Now I have no disposition to joke about Milwaukee, nevertheless, we are on the direct route to the Chain of Lakes, beautiful lakes of Wisconsin, and it is a perfect shame the way that men of means and men of brains have abused this right all along the line through Wisconsin. Not only in our city, but all along the line, the laxity with which physicians have been using this privilege is appalling. As far as the prohibition officer is concerned, he cannot do a thing, his hands are tied, and the public feeling in our community is that we are going to do something, and I believe that if some stand were taken by the general medical body, that these men, if they do not quit writing such prescriptions altogether, would certainly use the prescription more judiciously. As the doctor has said, the real use of whiskey should come at the suggestion of the doctor. Five men, absolutely strangers, came into the office in one day, and boldly asked for prescriptions. I inquired where they were from, and the reply was, what do you care where I am from, I have got the money to pay for it. I said, "This is no bar room." And it is not only our office, but all of the offices in town that are besieged, because we happen to have a good hotel, and these men simply make their headquarters there and pester these three men in our town who have this privilege, to the point where every

one of them has said that they wish they had never taken out the right. These three men make that statement, but still they go on filling the prescriptions.

Dr. C. F. Peterson, Independence: Mr. Chairman, I would like to say that I have written ten prescriptions for whiskey since the first of March, and they were all written on my initiative. If a man comes to me and *asks* for a whiskey prescription he does not get it. I prescribe whiskey like I prescribe any other medicine, only when it is indicated.

One of the ten prescriptions mentioned I wrote yesterday. It called for two ounces of whiskey. I told my patient to step into the drugstore, get the medicine and I would take him home in my car. (He was very weak.) When my patient presented this prescription the druggist refused to fill it. Formerly he kept whiskey in bulk, now he had it only in sealed pint bottles, and he claimed that he could not break the seal. He gave me to understand that I must prescribe in pint lots or not at all.

Now I wonder whether this was his own move or whether it is a general plan of the whiskey people to force doctors to prescribe whiskey by the pint. At any rate I asked him to hand me back my prescription, which he did. I tore it up and prescribed alcohol with other stimulating drugs, and informed him that I did not need the whiskey in pint lots. I wasn't a saloonkeeper.

The point I wish to make is that we had better watch the druggists and the whiskey people behind them. Some of the drug stores are being turned into saloons, and if they have any way of forcing the physician to prescribe a large amount, like a pint, when he needs only an ounce or two, they will do it. In this instance, my druggist tried to force me to prescribe a pint when, in my opinion, two ounces was all I needed.

Dr. W. F. Zierath, Sheboygan: Mr. Chairman and Gentlemen: I have been councilor now for the past ten years, and I think this is the most important question that has ever come up before the House of Delegates since I have been attending the State Medical Society meetings.

I noticed the other day on the bulletin board of our hospital a clipping from a newspaper saying that the American Federation of Labor was going to ask the Legislature to pass a law permitting Osteopaths to admit their patients into all the hospitals. Some of the doctors opposed the idea. It occurred to me at that time that people who live in glass houses should not throw stones. If there is anything that has ever showed up the medical profession, it has been this prohibition proposition, and the writing of these prescriptions. The high moral tone of the medical profession is a myth, absolutely. That has been demonstrated. Over 50 per cent of the physicians of the city of Sheboygan write prescriptions for whiskey, not because the patient needs whiskey, but because they are going to get a fee for writing that prescription. Some of them will not admit that, but it is a fact. I have had 22 patients come into my office since prohibition went into effect, who wanted a prescription for whiskey, and only one of them was sick. He wanted whiskey because he had been in the habit of taking whiskey for a cold, and I told him that he did not need whiskey, but I would give him something a good deal better for his cold. He took the prescription and went away and got well. Every one of the other 21 went to some other physician, and they got a whiskey prescription.

It is up to the State Medical Society to take a definite stand on this proposition.

I may be a radical on this proposition. My grandfather was a saloonkeeper. When I was married and first started practicing medicine, we used to have beer on our table. I come from a German community. But after I began practicing medicine and saw the economic and moral disturbance resulting from the liquor traffic —I am making no argument for prohibition, I discussed the thing with my wife, and we do not have liquor in any form in the house, and do not use it. As a physician I have never seen any use for whiskey or liquor in any form, and I think that is the stand taken by men who are divorced absolutely from any economic feature of liquor prescribing. If we want to maintain the high standard that we have claimed to have attained, of medical morality, it is up to us, as a state medical society, to take a very definite stand on this proposition. We cannot coerce any member not to write a whiskey prescription, but we can use persuasive methods, and it seems to me that this problem should be very thoroughly threshed out and some definite action taken. We cannot "pass the buck" to the druggist. He is simply in league with us. They do not like the part they are compelled to play. I know of druggists in Sheboygan who do not like to fill whiskey prescriptions. They determined at first not to do so. Finally one man who is a physician, and also a druggist, began to write whiskey prescriptions and fill them, and now they are all doing it.

Dr. J. M. Dodd, Ashland: Mr. Chairman and Gentlemen: In my clinical group there isn't one who has a permit to prescribe whiskey. We are frequently asked for prescriptions for liquors that are evidently not intended for medical purposes and the easiest way is to say that we have no authority whatever to write such prescriptions. I have not missed the whiskey in my practice. I have always found something else that would answer the purpose. I heartily agree with the gentlemen who have spoken, that there isn't anything that is bringing our profession into such disrepute as this use of the medical profession as a means to get around the prohibition amendment. I think it would probably be difficult to regulate the practice of some physicians. They will probably go ahead and write prescriptions for liquor regardless of our views on the matter. It will do no harm, and I feel that it will do a lot of good to the public and to the profession to let the world know that a representative body of the profession in the state, does not approve of that sort of thing.

Dr. S. S. Hall, Ripon: Mr. Chairman and Gentlemen: It seems to me that the most important step in this matter would be to have an interpretation of the law, so that the people know what it means. As I understand the law, no physician has the right to give a prescription to a patient, simply because they ask for it, for any sort of alcoholic drink. Personally I have never taken out a license. I think I have the right, however, and just the same right as one who had the license, to write a prescription under the law. Any physician can write a prescription for whiskey, whether he has a license or not, as I understand the law. All he has to do is to keep a copy of the prescriptions, keep a record of them.

And a great many come to me asking me to prescribe for a cold. And when I started to write a prescription for some medicine for them they would say that what they wanted was some toddy. I said, "you will have to go somewhere else, I never have written a prescription, I am not a saloonkeeper, I am not writing prescriptions for people because they want a drink; if you are ill, I make up my mind what you need, and if you need some whiskey I have a right to prescribe it, of course, but I would not do it because I think there is something else that is better for your cold; I think the whiskey does you harm."

I do not think that either the people or the doctors understand the law. The physicians are just as liable if they have a license and a book of prescriptions and regulations for the prescriptions, if they write a prescription, as if they did not have them. It is just a question of the people understanding the law. The doctors think they have a right. One man living in our town told me that he had written 20 or 30 whiskey prescriptions in one week, and told me he was getting a lot of money out of it. I do not think he knew that he was violating the law.

President: Is there further discussion of this matter? It is essentially a matter for the Council.

Dr. S. S. Hall, Ripon: I move, Mr. Chairman, that this matter be referred to the Council.

President: Is there a second to the motion?

Dr. W. F. Zierath, Sheboygan: Mr. President, may I speak for a moment? I do not know as that has any reference to the Council at all. The Council is sort of a closed body, and though we are supposed to interpret the sentiment of the County Society, I do not know as we do it. It seems to me that this is a matter that should be threshed out right in the House of Delegates.

President: Would you not be satisfied if it were referred to the Council to report back to the House of Delegates? What we need is a resolution.

Dr. Zierath: That means next year.

Secretary Sleyster: The Council meets today.

Dr. Zierath, Sheboygan: I had in mind the appointment of a committee of 5 to take this matter up and thresh it out, and bring in some kind of a report to act on; it does not make any difference, if the Council can act on it, we will do it that way.

Dr. S. E. Williams, Chippewa Falls: I think the idea of reporting to the Council for going over is a good idea, but as the doctor says, I would not be satisfied unless the general body acted on the matter. I do not believe we ought to load that onto the Council; I believe that the general body ought to take some definite action on it.

President: As I understand, the idea of Dr. Hall was to have the Council draw up a resolution, and then refer it back to the House of Delegates.

Dr. S. S. Hall, Ripon: Refer it back to the House of Delegates or to the scientific body, and let them vote on it, so as to have the entire Society put themselves on record.

President: Which would you prefer? In that way it would go to all three bodies.

Dr. S. E. Williams, Chippewa Falls: I think that is all right, as long as the matter comes before the general body for some sort of action.

Now this subject was attempted to be brought before the American Medical Association at the New Orleans meeting by a committee, but it was unsuccessful. It was thrown down with this excuse, that it was not the place to bring it before the American Medical Association, that it should be brought before the State Societies, and the states should take some definite action before the American Medical Association as a body should take any definite action.

I believe that some of them look at this proposition in this way, that the Federal authorities had the right idea, that they did not load this onto the physicians with any idea of making hardships for us. I believe it was loaded onto the physicians as a mark of respect and honor, and in the late war the great honor that the country conferred upon the medical profession was because of the speediness with which the medical profession acted, and I think this thing was loaded onto them because the authorities thought they were a body of men that would not use the privilege for such purposes. But as the doctor says, it is done.

This is not my own idea, but one of the elderly members of our county society asked me to bring this matter before the House of Delegates. He is not able to be here, or he could present it in a much stronger light than I can. But this is the idea of one of the most respectable physicians in our city, who thinks it is the most contemptible and degrading thing that has ever been loaded onto the medical profession. In our town there is only one druggist that has taken out this permit to write whiskey prescriptions, and it has certainly made it a very embarrassing situation between the doctors and the druggists, which never existed heretofore, just because this one man, the druggist, was responsible for these physicians taking out the permit to

write prescriptions, and he went to the physicians and asked them to do so. It shows the strangle hold they had on these men, they simply took it out not because they wanted it, but because they had to. And that is why we come before this body and ask them to take some action so they can say that the State Medical Society and the American Medical Association as well have taken action against it.

Dr. Edward Evans, La Crosse: My idea, and I think it is expressed in the doctor's idea, is that if the Council, as the Board of Censors of the State Medical Society, draws up a resolution and brings it before the House of Delegates and it is by them referred to the scientific body, that that will cover the matter.

Dr. W. E. Bannen, La Crosse: Mr. President, referring to the situation existing at La Crosse, the general public know that they cannot get prescriptions from the rank and file of the medical profession, the men who belong to our County Society. There are probably one, two or three men in this town that belong to the Society, that write prescriptions, and then only occasionally, and practically every prescription for whiskey that is written is written by men outside of the County Medical Society. It seems to me that if the State Society takes action on this matter, and disapproves of the writing of these prescriptions, that the public will feel reassurred in the feeling that they now have, that with the reputable physicians, and men who belong to our Society, they cannot get those prescriptions, and therefore, the humility and the degradation that has attached to the profession in general by reason of this, will be placed where it belongs, on the few who are willing to write these prescriptions.

I am surprised at the number that Dr. Zierath has in his town that are writing prescriptions. Here practically all of the men belong to the Society, and either cannot or will not write them. For instance, one of the doctors came down here from Camp Douglas, he had a thirsty crowd up there, and they told him he could not come back unless he brought back a couple of prescriptions. He visited practically every doctor in this town, and was unable to get a drop, and went back to Camp Douglas without a drop.

(Calls for the question.)

President: Those in favor of Dr. Hall's motion that the Council be directed to draw up a resolution, to be presented to the House of Delegates, amended by the House of Delegates as it sees fit, and then sent to the scientific body for action, will signify it by saying "aye"; opposed, "no."

Motion carried.

President: Is there further business to come before the House of Delegates this morning?

Secretary Sleyster: I have just been reminded, Mr. President, in connection with the election of the two councilors, that Dr. Nye, the councilor for the 3rd district has been absent from the state for more than a year, and the district has not been represented by a councilor. I received a letter from Dr. Nye a short time ago, possibly 2 or 3 weeks, stating that he was considering returning to Wisconsin, and locating in Madison, which is in his district, and asking that at the State Society meeting his plans be taken into consideration. I think, however, in view of the fact that he is not here and the district is not represented, it would be well for the House of Delegates to consider the matter at least, and take some such action, if possible, as we took in regard to the 1st District when Dr. Wilkinson was in the Service. You will recall that the House of Delegates appointed a man to act as vice-councilor during his absence. Some similar action could be taken today by the House of Delegates if it saw fit, or a motion made to declare the office vacant, and someone elected in his place, whatever your pleasure is in the matter.

President: What is the pleasure of the House of Delegates in that respect?

Dr. Edward Evans, La Crosse: Have you any suggestion to make, Mr. Secretary, as to who would be a good man in that place?

Secretary Sleyster: No, except that I think possibly in view of Dr. Nye's years of service as councilor, it would be only fitting, in view of his request, that no action be taken to dispossess him. However, I think it might be well for the House of Delegates to appoint someone from his district to represent him during his absence as vice-councilor. The constitution does not provide for that, but we have a precedent to do it.

Dr. Edward Evans, La Crosse: Do you know any good man down in that district, Dr. Sleyster?

Secretary Sleyster: Yes, there is a good man back there, Dr. Munn, of Janesville, Past-President of the Society, and Dr. E. B. Brown, secretary of the Rock County Society has been very active in organization matters for a good many years. We have our Madison physicians also, who are in that district. The other counties in the district are Sauk, Green and Columbia.

President: This matter might be referred to the Committee on Nominations.

Dr. C. A. Harper, Madison: I will nominate Dr. E. B. Brown to act in the place of Dr. Nye, while he is absent, as councilor.

Motion seconded.

Motion put and duly carried.

President: Is there further business to come before the House of Delegates this morning?

Dr. Edward Evans, La Crosse: Mr. Chairman and Gentlemen: I want to make an announcement. The chairman of the Arrangements Committee is not here, but he will make his announcements at 2 o'clock this afternoon. But to expedite matters I would like to get a little ahead of him. The County Society of La Crosse,

in an endeavor to entertain the State Medical Society, has put on this excursion, and the citizens of La Crosse have become interested to the extent that we have sold about 350 tickets, so that we know that we will have a good representation of the best people of La Crosse with us tomorrow evening.

Now I know that all the medical members who are in attendance here will want those tickets, and you will save a lot of confusion at the registration booth at the Normal School this afternoon, if you will get your tickets now as you go out this morning, if you intend to go on the excursion. There are tickets here, and you can have them.

I would like to announce that the Council will meet immediately after this meeting, in this room.

DR. JOSEPH SMITH, Wausau: Also the Nominating Committee will meet immediately after this meeting.

DR. T. J. REDELINGS, Marinette: Mr. President, I would also like to call a meeting of the Auditing Committee very soon.

SECRETARY SLEYSTER: I think we will have an unusually large amount of business at the meeting of the House of Delegates on the second day. The time is short, and the meeting is called for the morning (just preceding the general session). It is very important that every delegate be there promptly. I would suggest that we meet at 8 o'clock tomorrow morning at the Normal School.

PRESIDENT: If there is no further business this morning we will adjourn until 8 o'clock tomorrow morning at the Normal School.

HOUSE OF DELEGATES.

SESSION SEPTEMBER 9, 1920, 8:15 A. M., AT THE NORMAL SCHOOL.

Meeting called to order by the President. Dr. C. R. Bardeen, Madison.

The minutes of the last meeting were read.

PRESIDENT: Are there any corrections or suggestions with reference to the minutes of the last meeting? If not, they will stand approved as read.

SECRETARY SLEYSTER: The first order of business of the House of Delegates this morning is the election of officers, the report of the Nominating Committee.

PRESIDENT: We will now hear the report of the Nominating Committee read.

The report of the Nominating Committee was read as follows:

September 8th, 1920. Your Nominating Committee begs to submit the following nominations:

For President, H. W. Abraham, Appleton.
For 1st Vice-President, M. A. McGarty, La Crosse.
For 2nd Vice-President, J. P. Koehler, Milwaukee.
For 3rd Vice-President, Rollo Cairns, River Falls.

Committee on Public Policy and Legislation.

Edward Quick, Milwaukee, Chairman.
J. P. McMahon, Milwaukee.
H. P. Greeley, Madison.

Committee on Medical Defense.

Oscar Lotz, Milwaukee, Chairman.
H. Reineking, Milwaukee, Secretary.
S. S. Hall, Ripon, Treasurer.
F. P. Knauf, Kiel.
A. E. Bachhuber, Mayville.

Delegates to A. M. A.

Horace M. Brown, Milwaukee.
Rock Sleyster, Wauwatosa.

Alternate Delegates.

W. E. Bannen, La Crosse.
F. G. Connell, Oshkosh.

In view of the fact that the standing committees have done very excellent work, and have the subject matter of their respective lines of work well in hand, we thought it best to recommend the re-election of all standing committees.

Committee on Public Policy and Legislation.

Edward Quick, Milwaukee, Chairman.
J. P. McMahon, Milwaukee.
H. P. Greeley, Madison.

Committee on Medical Defense.

Oscar Lotz, Milwaukee, Chairman.
H. Reineking, Milwaukee, Secretary.
S. S. Hall, Ripon, Treasurer.
F. P. Knauf, Kiel.
A. E. Bachhuber, Mayville.

Publication Committee.

Oscar Lotz, Milwaukee, Chairman.
H. E. Dearholt, Milwaukee.
Joseph Smith, Wausau.
Rock Sleyster, Wauwatosa, Secretary.
S. S. Hall, Ripon, Treasurer.

Committee on Health and Public Instruction.

W. D. Stovall, Madison, Chairman.
W. H. Washburn, Milwaukee.
Edward Evans, La Crosse.

Committee on Medical Education.

L. F. Jermain, Milwaukee, Chairman.
Edward Evans, La Crosse.
C. R. Bardeen, Madison.

Committee on Necrology.

Rock Sleyster, Editor.
The Council.

Delegate to Council on Medical Education A. M. A.

L. F. Jermain, Milwaukee.

Delegate to Council on Health and Public Instruction A. M. A.

G. Windesheim, Kenosha.

Committee on Social Insurance.

A. W. Gray, Milwaukee, Chairman.
C. H. Lemon, Milwaukee.
G. E. Seaman, Milwaukee.
M. R. Wilkinson, Oconomowoc.
G. Windesheim, Kenosha.
W. F. Zierath, Sheboygan.
H. E. Dearholt, Milwaukee.

Committee on Hospitals: This Committee was to be appointed, according to the resolution read yesterday, by the Chair. That was settled yesterday. Our recommendation was that the committee remain the same.

Committee on Hospitals.

L. F. Jermain, Milwaukee, Chairman. 5 years.
L. E. Fazen, Racine. 4 years.
F. S. Wiley, Fond du Lac. 3 years.
J. V. R. Lyman, Eau Claire. 2 years.
F. G. Connell, Oshkosh. 1 year.

Committee on Cancer.

J. P. McMahon, Milwaukee, Chairman.
Edward Evans, La Crosse.
W. E. Ground, Superior.
C. H. Bunting, Madison.
W. K. Gray, Milwaukee.

Dr. Wilson Cunningham, Platteville: Mr. Chairman, I move the report of the Committee on Nominations, with the exception of the names of the secretary and treasurer, be accepted. The secretary and treasurer, I believe, are elected by the Council.

President: Is there any discussion of this report, or are there further nominations to be made?

Dr. A. J. Patek, Milwaukee: Mr. Chairman, only with reference to the Nominating Committee's report as to the personnel of the Committee on Medical Defense. As mentioned yesterday, that committee has heretofore been appointed by the Council, and not by the House of Delegates. It was erroneously so done a year or two years ago.

President: We understand that there is one amendment that has been accepted, and that is that the secretary and treasurer be elected by the Council. You could add that in voting on this motion to ratify the nominations; it would be understood that the secretary and treasurer are elected by the Council and not by this body.

Is there further discussion? If not, those in favor of the election of the men nominated by the Nominating Committee for these various offices will signify by saying "aye"; opposed, "no."

Motion duly carried.

President: The secretary will cast the ballot of the House of Delegates.

Secretary Sleyster: The ballot of the House of Delegates is cast for the officers mentioned.

The next business to come before the House is the reports of the committees appointed yesterday. The report of the Committee on Reports of Officers and Committees.

Dr. A. J. Patek, Milwaukee: I am sorry to say, Mr. President, that owing to the remissness of your chairman, the committee's attention was not called to one point upon which we were to report, and that is this matter of medical defense, because there is no utterance either in the by-laws or constitution that governs medical defense at all. Not until this morning did it occur to me that we were also to draw up something in the nature of a by-law, so that feature of our Society could be officially incorporated. If there is still time, that can be done. There will be another meeting of the House of Delegates, will there not?

Secretary Sleyster: There will be a meeting of the House tomorrow morning It should be introduced this morning.

Dr. A. J. Patek, Milwaukee: Amendments to the by-laws must be introduced before the session at which they are acted upon. They must be tabled 24 hours before being acted upon by the House of Delegates, I believe.

Secretary Sleyster: Yes.

Dr. A. J. Patek, Milwaukee: So if you will take my mention of it now as equivalent to the introduction of the by-law, there will not be another delay of a year before action can be taken.

The report of the Committee on Resolutions was presented as follows:

To the House of Delegates:

The Committee on Resolutions begs to report as follows, this report being based upon recommendations made to the House by individual delegates, and upon other special communications:

1. To defray additional cost of publication of Journal and other operating costs, we recommend an increase of two dollars in the annual dues, totalling $4.00, this sum including State Society membership and subscription to the Journal.

Dr. A. J. Patek, Milwaukee: All this is based upon arguments made yesterday. We did not see fit to do more than report our resolution.

President: It would probably be best to take these resolutions up individually. You have heard this first one read. Is there any discussion, or would anybody like to hear it re-read? There was a little confusion.

(First resolution re-read.)

President: This would mean that the total dues of each member would be increased $2.00?

Dr. Patek: $2.00.

Dr. Sleyster: From $4.00 to $6.00, including defense.

President: The defense has not been increased, that is separate.

DR. A. J. PATEK: Dues at $4.00, medical defense to remain at $2.00. Our committee introduces that as a resolution.

DR. A. E. BACHHUBER, Mayville: I suggest we make it an increase of $2.00 to defray expenses, including the increased cost of Medical Defense, so some of that money can be put in the Medical Defense fund, if necessary.

DR. A. J. PATEK, Milwaukee: It cannot be done that way. That is a different fund entirely.

PRESIDENT: According to the report yesterday the Medical Defense fund is in pretty good shape just at present.

DR. S. S. HALL, Ripon: Our bills are all paid up to date. Out of the money we had last year I paid the deficiency of last year, and also paid the bills up to date. At the present time we have something over $400 left in the fund, so that I advise that no change be made this year. If we run short we can fix it up the next time we meet. Our bills will not come in until pretty nearly time for the next meeting, and there is no need of collecting money and having it in the treasury for that purpose. The Defense fund has always been kept as a separate fund; it is not in the nature of a general fund at all. It is kept for that purpose, for the reason that quite a number of the members of the Society have refused to pay the Medical Defense fee, and as long as that is the case we thought it would be better to keep the funds entirely separate.

PRESIDENT: You have heard the report of the Committee. If there is no further discussion, we will put the matter to a vote. Those in favor of accepting this resolution which increases the dues $2.00, will signify by saying "aye"; opposed, "no."

Resolution duly carried.

Second resolution read as follows:

"2. In the matter of the suggestion for a joint meeting with the Tri-State District Medical Association in 1921, we recommend that there be no affiliation with that organization, and that our meetings be held annually and under our own auspices, as heretofore."

DR. A. J. PATEK: I think this was explained yesterday, wasn't it, Dr. Sleyster?

SECRETARY SLEYSTER: Just what was in my report. I did not go into it very fully.

PRESIDENT: Is it necessary to take any action, if you are not going to affiliate?

DR. JOSEPH SMITH, Wausau: Mr. President, I agree with the spirit of the resolution, but it sounds as if that resolution would be our permanent policy. I doubt if that is a good thing, to send such a statement to them. I believe it would be better to say that in view of the fact that the coming year is our 75th Anniversary we feel that we ought to have our own meeting, for the purpose especially, of celebrating our 75th Anniversary, and let it go at that, and not commit ourselves to any permanent policy.

PRESIDENT: You introduce that as a substitute?

DR. JOSEPH SMITH, Wausau: I would introduce that as a substitute or amendment to the resolution.

PRESIDENT: Is that substitute seconded?

Substitute seconded.

PRESIDENT: Those in favor of adopting the subsequent resolution in place of that offered by the committee, will signify by saying "aye"; opposed, "no."

Motion duly carried.

PRESIDENT: It is carried.

DR. A. J. PATEK, Milwaukee: Mr. Chairman and Gentlemen: I have a little objection to offering that substitute amendment. There is a firm conviction expressed by a number of men, that there is no particular reason why we should in any way lose our identity as a state association by affiliating at our annual meeting with another organization, with which we have absolutely nothing in common. That organization has not been recognized by the national body, has not been recognized by the Illinois state body, has not been recognized by the Iowa state body. That organization has on its program only men who are drawn from various parts of the country, and its motive is so different from ours that I cannot see why there should be any direct affiliation either now or in any succeeding year.

DR. JOSEPH SMITH, Wausau: May I say just a word. I am in entire accord with the spirit of the resolution. It is merely a question of policy. We have a good many members in this state who are rather friendly to that organization, and I doubt the policy of flatly refusing in that sort of way to have anything to do with it. I think it would be better policy simply to postpone it and let the matter drop, but to continue to do the same thing in the future.

PRESIDENT: If at any time the thing comes up specifically, the same action may be taken. Is there any desire to reconsider Dr. Smith's motion? If not, it will stand as accepted by the House of Delegates.

What is the next matter in the report?

Third resolution read as follows:

"3. We recommend the adoption of the resolution submitted by the House of Delegates of the Ohio State Medical Association as follows:

"1. *Whereas*, In our forty-eight states there are as many separate medical examining boards, and

"2. *Whereas*, Licensed physicians in one state may not always practice in other commonwealths without vexatious examinations and expense, and

"3. *Whereas*, The practice of medicine is uniform throughout the length and breadth of the land:

"*Therefore, Be It Resolved*, That it is the opinion of the House of Delegates that the right to practice in one state should be extended to include the right to practice medicine in any part of the United States.

"*Be It Further Resolved*, That a copy of this resolu-

tion be sent to the proper officials of all medical societies, and to national and quasi-national medical associations, and that the American Medical Association be especially urged to perfect a plan by which interstate medical practice may be made a reality."

DR. A. J. PATEK: Our committee recommends the adoption of this resolution.

Motion seconded.

PRESIDENT: Is there any discussion of this resolution? If not, those in favor of adopting the resolution presented by the committee will signify it by saying "aye"; opposed, "no."

Motion duly carried.

Fourth resolution read as follows:

"4. We approve and recommend for adoption the suggestion of the Committee on Medical Education that a bill be introduced petitioning the Wisconsin State Legislature, at its coming session, to make one year interneship at a recognized hospital an obligatory qualification for candidates for license to practice medicine in this state."

PRESIDENT: I would suggest that ought to be worded in such a way that the graduate from the 5th year course would not be required to take an interneship. There are schools that do not grant a degree until after the man has his interne year or its equivalent, and this ought not to make such a man take an interne year on top of his 5th year course.

DR. A. J. PATEK, Milwaukee: It ought to be hospital or laboratory. Some men would not want to take the hospital, and would take a laboratory year.

PRESIDENT: This refers to graduates, you see.

DR. A. J. PATEK, Milwaukee: I do not understand. You prefer to have this worded so that it will state that he have a total of 5 years?

PRESIDENT: If a degree is granted at the end of 4 years, he would have to have his intern year. The act should not require an intern year from a man that has graduated from a school that does not grant a degree until after the intern year is completed, like Minnesota and Rush.

DR. A. J. PATEK, Milwaukee: I think this amounts to the same thing. We say, "will not get his license to practice"; we have nothing to do with graduation or granting of a degree. It reads, "not licensed to practice until after he has had one year interneship after graduation."

PRESIDENT: He does not graduate from a 5 year school until he has had his intern year.

DR. A. J. PATEK: I see.

PRESIDENT: The proper change in wording cannot be framed here, but the resolution can be adopted in substance.

DR. A. J. PATEK, Milwaukee: Merely a slight alteration of the wording.

PRESIDENT: Is there further discussion? Those in favor of adopting the resolution in substance, with the understanding that such verbal alterations may be made as seem wise, without altering the sense of the meaning, will signify by saying "aye"; opposed, "no."

Motion duly carried.

The 5th resolution read as follows:

"5. We recommend that the Hospital Committee be directed to continue its efforts at a proper classification of the State's hospitals; that co-operation with the State Board of Medical Examiners in its investigation into the status of hospitals and training schools be encouraged; and that $300 of the State Society's funds be appropriated for this purpose."

DR. A. J. PATEK, Milwaukee: The State Board of Medical Examiners has been and is making an inspection of hospitals and training schools connected with hospitals of a certain size, and we thought our committee of the State Society could co-operate with that committee and be helpful to it, and that in turn they could be helpful to our committee, and in case some special investigation is needed for hospitals that the State Board of Examiners is not going to reach at all, a limited sum of money could easily be spent for such purpose, and while $300 is not very much, it may be sufficient for any one year, and that money can be voted for this particular purpose at any succeeding year, if it is needed. We therefore recommend a small sum, but one that may be sufficient, and perhaps also as big as our treasury or income will allow.

PRESIDENT: Is that recommendation of the committee seconded?

Recommendation seconded.

PRESIDENT: Is there any discussion?

Motion put and duly carried.

Sixth resolution read as follows:

"6. We recommend the adoption of the following resolution:

"This Society, in Convention assembled, endorses the work of the Wisconsin Psychiatric Institute in the care of former soldiers suffering from mental derangement, and voices its appreciation of the Service Recognition Board in making available funds for this purpose, and the Board of Control in its policy of rehabilitation of these unfortunate victims of the late war."

DR. A. J. PATEK, Milwaukee: Mr. President, we recommend the adoption of this resolution, and would ask you to permit Dr. Lorenz to explain the character of the work that has been done, and upon which this resolution is based.

PRESIDENT: Dr. Lorenz, will you explain the purpose of the resolution?

DR. W. F. LORENZ, Mendota: Mr. President and Gentlemen: The purpose of this resolution, as I under-

stand it, is to get moral support from the medical profession in a certain effort that is being made in this state. You may have noticed in a late issue of the Tribune that inspired article by Colonel Salmon of the National Committee of Mental Hygiene, who is thoroughly familiar with the situation throughout the nation, in which it is said that about 1600 men with mental derangement, former Service men, are in jails, lockups and alms-houses throughout the United States. This applies to conditions in other states, not in ours. In this state an effort has been made to collect all these cases, that is, those who cannot afford private sanitarium treatment, in one institution, to-wit: the institution at Mendota under my direction, and we have made conditions almost ideal for the care of these men. This was made possible through the action of the Service Recognition Board who voted $30 per month for each patient treated. It would not have been possible without this financial aid from the Service Recognition Board. It was also made possible, of course, through the co-operation of the Board of Control. However, the situation is this: there are additional things desirable, and in general, that the medical profession may support this effort, it is thought that this resolution would carry great weight with those in authority. I might add, the resolution in no way requests or intimates the need of more money, because that is not necessary. The Federal Government now pays the state of Wisconsin $2.50 for each man per day, and the state cannot expend more than about $1.00 or $1.25; in other words, the state is ahead right now in the care of these men, and it is hoped that with the support of the medical profession in this really serious problem, that the Federal money which is actually coming to the state treasury, might be made available for the purpose intended.

PRESIDENT: Is there any discussion of this resolution?

DR. W. F. ZIERATH, Sheboygan: Mr. Chairman, may I ask Dr. Lorenz how many men he has down there?

DR. W. F. LORENZ, Mendota: There has been an average of about 80. There have been about 130 cases in since November, and about 40 or 45 have been returned home as recovered. I might add that our treatment is along the following lines: a very well planned occupational therapy department, a well planned educational therapy department, adequate medical service, adequate trained nursing service, conditions which do not obtain in any state hospital.

Our interest in this is not alone for the care of these men, but to show what can be done with proper medical provisions in the care of the insane, and have this serve as an example to any state or community of what might be done, in the hope that some day they will do the same for the civilian. That is the real purpose behind this thing.

DR. W. F. ZIERATH, Sheboygan: Dr. Lorenz, is it likely that you will have soldiers coming in there for a couple of years?

DR. W. F. LORENZ, Mendota: The Government believes that it will be a steadily increasing problem for seven years, and then a decreasing problem for an additional seven years. In general, the plans being made by the Federal Government are for a matter of 20 odd years.

PRESIDENT: Is there further discussion?

DR. C. A. HARPER, Madison: Mr. Chairman and Gentlemen: I simply want to say also that I know a good deal about the work that is being done in regard to these soldiers, and the care that is being given them. I believe it is a most excellent piece of work. This should be instituted in the state not only as far as the soldier population is concerned, but as Dr. Lorenz has said, as far as the civilian population is concerned. I am therefore, in hearty accord with the resolution and second its adoption.

DR. W. E. BANNEN, La Crosse: Mr. President, will Dr. Lorenz state the steps that are necessary for getting these men committed, those that we see out in our general practice, how we shall advise these men to proceed in order to get into the institution.

DR. W. F. LORENZ, Mendota: The arrangements are as follows, and the practice has been this: anyone who is acting for the Public Health Service, having such a case in hand, can telegraph to the supervisor of the 8th District, stating the nature of the case, and asking advice. However, it is not necessary to do that. The advice that usually will be returned is, to get in touch with Dr. Sleyster or myself, and the actual happening after that is the mere sending of the man to either some private sanitarium, if arrangements can be made, or if it is an urgent case, directly to the State Hospital at Mendota. When the patient arrives at the State Hospital at Mendota he automatically comes under the supervision of the institute.

I wish to emphasize this point, that the institute is physically and financially separate from the state hospital, has nothing whatever to do with the State Hospital; its management and its equipment are not in common with the State Hospital at all. We have an entirely separate building, modern, fireproof, with 40 beds. This capacity is inadequate for the present, but we are now arranging for an additional ward which is also separate from the State Hospital, which we will renovate and fix up and make decent, with a capacity of about 50, giving us about 90 total capacity.

PRESIDENT: Is there further discussion of this matter? If not, those in favor of adopting this resolution will signify it by saying "aye"; opposed, "no."

Motion duly carried.

PRESIDENT: Is there anything more, Dr. Patek?

DR. A. J. PATEK, Milwaukee: That is all.

SECRETARY SLEYSTER: I think that brings us to unfinished business, the report of the Committee on the Alcohol Question.

PRESIDENT: Is the Committee on the Alcohol Question, of the Council, ready to report this morning?

DR. T. J. REDELINGS, Marinette: Mr. President, I would like to state that the Committee very carefully considered the problem assigned yesterday, and after due deliberation and many efforts to formulate an accurately worded resolution which would cover the ground, in justice to the honor of our profession, and in fairness to the law, and without antagonizing those in the profession who are sincere in their belief that it is necessary to occasionally prescribe liquor, have finally settled upon a resolution, the final wording of which was executed by Dr. Dodd, a member of the committee, and I am going to ask him to read the resolution.

Resolution read by Dr. J. M. Dodd, Ashland, as follows:

"*Whereas*, The practice of indiscriminate prescribing of liquor by some members of the medical profession on the mere request therefor, and without regard to the medical needs of the individual, is bringing our profession into disrepute, and

"*Whereas*, The State Medical Society of Wisconsin as a body desires to affirm its wish that all its members shall render strict obedience to the laws whatsoever they may be, therefore

"*Be It Resolved*, That the State Medical Society of Wisconsin as a body condemns all and every effort on the part of the medical profession to take unfair advantage of the privileges granted under the law to physicians, by the indiscriminate granting of prescriptions for the purchase of alcoholic stimulants, and be it further

"*Resolved*, That we memorialize our members of Congress to modify the law regulating the dispensing of liquors so that the abuse of its privileges shall be more difficult."

PRESIDENT: Gentlemen, you have heard the resolution. Is there any discussion? It would seem to me on hearing that, that it implies that it is a practice rather more general than it actually is. You had there "by some members of the profession," that first part.

DR. WILSON CUNNINGHAM, Platteville: I was thinking myself, practiced by some few members.

PRESIDENT: Yes, something of that kind.

SECRETARY SLEYSTER: Practiced by some few physicians, rather than members.

PRESIDENT: If that were in there it would not imply the profession in general. I do not think that is true; it is a rather small minority. Maybe Sheboygan is an exception.

DR. W. F. ZIERATH, Sheboygan: I do not think we are any different than other communities.

PRESIDENT: In Madison there are mighty few doing it that I know of. If you had it in there "by some members" so that it did not imply it was the general practice, it would be better. If the thing is left as it is, it would probably imply a rather general practice as I heard it read.

DR. W. F. LORENZ, Mendota: Mr. President, may I have the privilege of the floor. I should like to inquire if there is any way by which the action of the Society in commending upon the work of the Wisconsin Psychiatric Institute could be sent to the individuals or boards mentioned in the resolution? Could that be arranged without action?

PRESIDENT: Oh yes, Dr. Sleyster could readily do that.

DR. LORENZ: That of course would have a very desirable effect.

SECRETARY SLEYSTER: You mean the Service Recognition Board and the Board of Control, I suppose.

DR. LORENZ: Yes.

SECRETARY SLEYSTER: I will send them.

DR. J. M. DODD, Ashland: Would it remove the objection in this liquor resolution by saying "some members of the profession"?

PRESIDENT: Yes, I think that would fix it. Is there any objection to that slight verbal alteration? If not, those in favor of the resolution will signify it by saying "aye."

DR. T. J. REDELINGS, Marinette: Mr. Chairman, it has just occurred to me this moment that the giving of publicity to this resolution might have a good effect not only upon the profession, but it might be of value to the lay-people of this state.

PRESIDENT: I was thinking that probably that would be a good idea.

DR. T. J. REDELINGS: I think that publicity should be given to this act of the Society.

PRESIDENT: Those in favor of the resolution will signify it by saying "aye"; opposed, "no."

Resolution duly carried.

DR. W. F. ZIERATH, Sheboygan: Mr. President, what is to become of this resolution, is it to be carried before the general body?

PRESIDENT: It will give it more effect if it can be given to the local reporters, and given to the Associated Press. Dr. Sleyster can attend to this.

DR. W. E. BANNEN, La Crosse: As Dr. Sleyster just said, I think it should read, "some physicians." As I stated yesterday morning, most of the prescriptions that are being written here are being written by physicians who are not members of the Medical Society.

PRESIDENT: I think that Dr. Dodd has amended that in that way.

DR. WILSON CUNNINGHAM, Platteville: Some members of the medical profession.

PRESIDENT: Yes, that would do it.

DR. S. E. WILLIAMS, Chippewa Falls: Mr. Chairman, I would like to ask Dr. Sleyster if he would not send each county society this resolution in the very near future, because we would like to get a little action upon it up in our community. I know that reading it in the Press would not be quite so forcible.

SECRETARY SLEYSTER: Yes, I will do that.

DR. S. E. WILLIAMS, Chippewa Falls: I wish to thank the gentlemen who drew up this resolution. This meets our requirements. It can be no detriment to the profession, and it will be a help to us.

PRESIDENT: Is there further business to come before the House of Delegates this morning?

DR. H. E. DEARHOLT, Milwaukee: Mr. President, in line with your suggestion, might it not be well for the House of Delegates to pass an additional motion to the effect that this resolution be forwarded to every local county society, with the request that they endorse it or adopt a similar resolution on their own behalf?

PRESIDENT: Do you want to make a motion to that effect?

DR. H. E. DEARHOLT, Milwaukee: I so move, Mr. President.

Motion seconded.

DR. W. F. ZIERATH, Sheboygan: I would also amend that motion, Mr. President, by suggesting that the secretary of our State Society send it to the secretaries of every other state medical society. That will act as a moral force to induce them to adopt similar resolutions in their societies.

PRESIDENT: Do you accept that amendment, Dr. Dearholt?

DR. H. E. DEARHOLT, Milwaukee: I do.

PRESIDENT: Those in favor of the amended resolution will signify it by saying "aye"; opposed, "no."

Motion duly carried.

PRESIDENT: Has anyone else anything that they would like to bring before the House of Delegates this morning? If not, the meeting will be adjourned until tomorrow at 8:30 A. M.

Adjournment to 8:30 A. M. next day, Sept. 10, 1920.

HOUSE OF DELEGATES.

SESSION SEPTEMBER 10, 1920.

8:30 A. M.

Meeting called to order by the President.

Minutes of last meeting read.

PRESIDENT: Is there any objection to these minutes as read, or any suggestions to be made? If not, they will stand approved as read.

What is the next business to come before the House of Delegates this morning?

SECRETARY SLEYSTER: Mr. President, the general session yesterday recommended that we elect Dr. Dean Lewis as honorary member of the Society, and I therefore make such a motion.

Motion seconded.

Motion put and unanimously carried.

PRESIDENT: Is the Auditing Committee ready to report?

SECRETARY SLEYSTER: The only other thing that I know of would be the reconsideration of that liquor resolution.

PRESIDENT: Does anybody want to bring up a reconsideration of this alcohol resolution?

SECRETARY SLEYSTER: This resolution, I believe, should be turned over to Dr. Dodd, who knows more about it than I do.

DR. J. M. DODD, Ashland: Mr. President, the committee to whom was entrusted the duty of writing this resolution covering the practice of dispensing liquors by physicians in such a manner that it brings us all into discredit, had some difficulty in framing up language that seemed to suit the occasion. We got as far as the preamble, and then I happened to meet Dr. Horace Brown, knowing that he was an expert in the handling of the King's English, I asked him if he would not assist us in framing up this resolution in proper language. He kindly consented to do so, and when I presented it to the other members of the committee they suggested the addition of the last clause, and in that form it was passed. We found out last night that Dr. Brown had expressed very serious objection to this additional clause. The rest of us could not see it from his point of view, so we told him we would bring it up this morning for further consideration. I will read the resolution to you, then you can see the wording of it.

Liquor resolution read as follows:

"*Whereas*, The practice of indiscriminate prescribing of liquor by some members of the medical profession on the mere request therefor, and without regard to the medical needs of the individual, is bringing our profession into disrepute, and

"*Whereas*, The State Medical Society of Wisconsin as a body desires to affirm its wish that all its members shall render strict obedience to the laws whatsoever they may be, therefore

"*Be It Resolved*, That the State Medical Society of Wisconsin as a body condemns all and every effort on the part of the medical profession to take unfair advantage of the privileges granted under the law to physicians by the indiscriminate granting of prescriptions for the purchase of alcoholic stimulants, and be it further

"*Resolved*, That we memorialize our members of Congress to modify the law regulating the dispensing of

liquors so that the abuse of its privileges shall be more difficult."

PRESIDENT: Does anybody desire to make a motion eliminating this clause?

DR. S. E. WILLIAMS, Sheboygan Falls: Mr. President, I make the motion, out of respect to Dr. Brown, that we strike out this last resolution, for the reason that I believe it detracts from the original idea. I believe that if that is put in, it ought to be in the form of another separate resolution that is sent to our representatives, making that a different issue than what it is, and leave the resolution as Dr. Brown originally had it. To my notion it is a stronger resolution, and has a stronger effect upon the physician, than with this part in.

PRESIDENT: Is there a second to the motion? If we get the motion before the House we can have it discussed.

Motion seconded.

PRESIDENT: The motion has been made and seconded. We would be glad to hear from Dr. Brown.

DR. HORACE M. BROWN: Mr. Chairman and Gentlemen: There are two reasons why this last clause should under no circumstances appear in the resolution adopted by this body. The first is the most important of all, and it is that by memorializing Congress, or your Congressmen, you tacitly admit and pointedly draw the attention of the public to the fact that you believe yourselves all to be rascals, and that you want further laws in order to regulate your affairs. This resolution with that clause in it, involves all of the medical profession of the United States, and involves the admittance on the part of the members of this body and our Society, that all of the members of the profession are scoundrels, and require more laws to regulate their affairs. All members of the profession are not rascals. There are a certain number of the profession who are, and there always will be, no matter how many millions of laws you make, and such men will take advantage of every opportunity to slide around the corner of any law or regulation that may be made, if by so doing they can benefit their own pockets.

Secondly, I think none of us wish to condemn all of the profession and ask for more laws. But the second reason is this: that it is not in any wise the function of this organization, the Wisconsin State Medical Society, to decide to go into politics, or the question of making laws. The whole and sole reason why a resolution such as the first part of this should be brought before this body, is that we, representing the profession of the State of Wisconsin, should put ourselves on record as a body as being in favor of *obedience to the law*. That is the end of our function. By our making that resolution, with the preamble as it is given here, it shows the reason for our coming before the public with this affirmation of our desire to be loyal citizens. We have completely fulfilled our duty; beyond that, it is the same old story of the silly idea that has come down to us from feudal times, that by making a law you can change the weather. We have, God knows, enough laws. It has been nothing but more laws and more laws, and always more laws, throughout the whole period of our present prostatic administration. (Laughter.) I am quite sure that when you think of it you will see that this amendment that is added to the original resolution provided by your committee, and drawn by me, is all you need. You do an excellent thing by affirming your desire to obey the law, and affirming your wish that every man of your profession should obey the law, and then you emasculate the whole proposition. Besides that, you step entirely out of your province and make a blooming fool of yourselves.

Now, Gentlemen, if anybody here can show any good reason why that should be tacked onto the preamble and resolution, all right, but it will have no effect on any congressman; it simply emphasizes the idea, which is not true, but will be the idea conveyed to the public, that all medical men are rascals, and, being rascals, we beg the Government to make laws to keep us from being rascals. It is absurd in the face of it, absurd in its production, absurd in its birth, its motherhood, fatherhood, and generation.

PRESIDENT: We would like to hear an equally eloquent speech on the opposite side. Is anybody able to make it?

DR. J. M. DODD, Ashland: Mr. President, there is some question as to whether or not Dr. Brown did the first appendectomy in this country; let us give him the privilege of doing the last one, and remove the appendix from this resolution. (Laughter and applause.)

PRESIDENT: Is there any more eloquence? If not, those in favor of removing this appendix, say "aye"; opposed, "no."

Motion duly carried.

PRESIDENT: The motion is carried. Is there anything more to come before the House of Delegates?

Major Gentz Perry would like the privilege of addressing the meeting. If there is no other regular business to come before the meeting, we will extend the privilege of the floor to Major Perry.

MAJOR GENTZ PERRY: Mr. Chairman and Gentlemen: I have a resolution here upon which you may desire to "operate." However, I have no apology to offer in presenting this resolution, because I believe that each one of us, if a member of our family were today stricken with tuberculosis, would *not* send that individual to the average county tubercular sanatorium in this state.

When I was put in charge of the United States Public Health Service work in this state, under the District Supervisor, I was instructed by direct official orders to not place a tubercular patient of the Federal Government in any tubercular sanatorium where the sanatorium did not employ a full time medical officer. But, owing to the exigencies of the Service, this had to be modified. I warned the District Supervisor's office of the fact that the accommodations for tubercular patients in the state were so limited that it would be necessary

for us to place United States Public Health Service patients in the county sanatoria as they now exist. So we have been struggling along between the Devil and the Deep Blue Sea in this matter all of the months of this calendar year. I present for your action resolutions which have been tentatively drawn up, and which provide for certain improvements that are very badly needed, and those of you who have studied the situation, I am sure will agree with me on that point.

In taking up this matter early in the year, Dr. Dearholt, who is very earnestly engaged in this work, answered some of my statements about the county T. B. sanatoria in this way: I had said to him that these institutions were not good enough for the men who lost their health in the service of our country, remarking, "They are not good enough to take care of our United States Public Health Service tubercular patients," and he said, "I agree with you, but I also want to state that what is not good enough for the soldier is not good enough for the rest of the people." Now I agree with him. In fact, I think we all agree with each other that the county T. B. sanatoria in this state are badly in need of improvement.

I do not appear before you as a reformer; I come before you as a constructive worker, helping to develop into further usefulness the excellent ideas that these institutions represent. They simply need to be further developed, and in the evolution of their development they will eventually be more satisfactory, but at the present time they are certainly not satisfactory.

It is realized that in presenting these resolutions I am before you as a privileged speaker, and it is also realized that if this Society adopt the resolutions, that they are merely suggestive of future legislation, and, to that end, if you will grant the privilege of your attention for a few moments, we will try to present some of the ideas which we have worked hard to perfect to the present state during the last eight or nine months.

RESOLUTIONS OFFERED BY MAJOR PERRY.

"We the members of the Wisconsin State Medical Society, realizing the responsibilities resting upon us as the leaders in all matters pertaining to the physical health and welfare of the people of Wisconsin, and, in full appreciation of the duties devolving upon us as the custodians and guardians of the sick and disabled people of our state, having carefully investigated and thoughtfully considered the splendid movement made to assist the tubercular patients coming under our care, respectfully offer the following resolutions for the guidance and assistance in the care and treatment of persons having tuberculosis:

"1. *Be It Resolved,* That we express our appreciation of the splendid and practical work done by the Wisconsin Anti-Tuberculosis Association and the zeal and efficiency of the Officers and Workers of that commendable organization.

"2. *Be It Resolved,* That in order to promote the practical usefulness of the County Tubercular Sanatoria, we urge that the patients in these Sanatoria be treated exclusively by regularly graduated Doctors of Medicine who have successfully specialized in tuberculosis work and who are to devote their entire time and attention exclusively to the care of the patients in one or more of these County T. B. Sanatoria and who are to be selected and appointed for these positions in the following manner: First, The State Medical Society shall submit a list of names of doctors, who are deemed duly qualified, according to the laws of the State of Wisconsin and according to the provisions of these resolutions, to the Governing Officials of the Wisconsin Anti-Tuberculosis Association for the endorsement and recommendation of those Officials; Second, From the list so recommended by the State Medical Society and endorsed by the Wisconsin Anti-Tuberculosis Association, the State Board of Health shall appoint a Doctor who shall be the Medical Attendant of each such one or more County T. B. Sanatoria as the number of beds occupied therein, as shown by the monthly average during the preceding twelve months, shall indicate the need of such Sanatoria; Third, In so appointing such Medical Attendants, the State Board of Health shall provide one full time Attendant for an average of each seventy-five patients, as nearly as may be done according to existing conditions.

"3. *Be It Resolved,* That every County T. B. Sanatorium so employing a full time Tubercular Specialist, appointed as herein provided, shall receive from the State of Wisconsin each year a sum equal to one-half the actual salary it pays to such full time Specialist who is thus employed as the Medical Attendant of the Sanatorium.

"4. *Be It Resolved,* That the minimum salary of these full time Attending Specialists shall be fixed at four thousand dollars per year and that this minimum salary shall be revised yearly by a Joint Commission consisting of two men selected by each of the three following organizations: a. The Wisconsin Medical Society; b. The Wisconsin Anti-Tuberculosis Association; c. The Wisconsin State Board of Health. This commission of six men shall meet at the State Capitol on the second Tuesday of each year to decide upon the minimum salaries for these Medical Attendants for the ensuing year."

PRESIDENT: Gentlemen, you have heard the resolutions presented for your consideration, by Major Perry. What action do you desire to take?

DR. W. F. ZIERATH, Sheboygan: Mr. President, is not this whole subject covered in the laws of the state of Wisconsin? Would it do us any good, or do the Service any good to have any resolutions like this passed? These needs are all comprehended in the laws of the state of Wisconsin. It would be necessary to go before the Legislature.

PRESIDENT: In order to be effective it would undoubtedly need legislative action.

DR. W. F. ZIERATH, Sheboygan: I think it would.

Passing those resolutions merely gives them some degree of moral force.

PRESIDENT: It appears to me also that in the resolutions we have some confusion. There is an endorsement of the Anti-Tuberculosis Association together with an outline of legislation for the Wisconsin Legislature. The two things do not gibe very well. I think that this matter could be referred by the House of Delegates to the Committee on Legislation of the State Medical Society, with the endorsement of the general idea, or such modifications as the members might think would be worth while, or to the Council, for consideration, and then presented by the Committee on Legislation to the next Legislature. Of course the House of Delegates here could not very well adopt these resolutions as they stand. They are not in the right shape.

DR. L. F. JERMAIN, Milwaukee: Will the Council meet again before the Legislature meets?

SECRETARY SLEYSTER: The 1st of January, yes.

PRESIDENT: I think the proper thing would be to refer the matter to the Council, with the suggestion that the body approve of the scheme of having some provision made to insure proper medical attendance at the County Sanatoria.

DR. L. F. JERMAIN, Milwaukee: I move, Mr. President, that the matter be referred to the Council.

Motion seconded.

PRESIDENT: Do you want to make any endorsement of the general idea, or merely refer it to the Council?

DR. L. F. JERMAIN, Milwaukee: Yes, that can be embodied, that the House of Delegates endorse the plan and idea.

PRESIDENT: As I understand the motion, you move that this matter be referred to the Council, with the approval of the House of Delegates, of the scheme of making the medical attendance at the County Sanatoria better.

DR. JERMAIN: Yes, sir.

Motion seconded.

PRESIDENT: Is there discussion of this matter?

Motion put and duly carried.

SECRETARY SLEYSTER: We have not as yet had the report from the Auditing Committee.

DR. W. F. ZIERATH, Sheboygan: Mr. President, Dr. Redelings was chairman of that committee. We have audited the accounts of the treasurer, and found everything all right.

PRESIDENT: We can accept that report then. Is there further business to come before the House of Delegates?

DR. JOSEPH SMITH, Wausau: Mr. President, I think on behalf of the House of Delegates and the State Medical Society, that we ought to extend a vote of thanks to the La Crosse County Medical Society for the excellent arrangements that have been made for our entertainment.

PRESIDENT: Do you make that as a motion?

DR. JOSEPH SMITH, Wausau: I make that as a motion.

Motion seconded.

Motion put and unanimously carried.

PRESIDENT: Is there further business? If not, a motion to adjourn is in order.

DR. W. E. BANNEN, La Crosse: Mr. President, I move that we adjourn.

Motion seconded.

Motion put and duly carried.

House of Delegates adjourned.

LIST OF MEMBERS OF THE STATE MEDICAL SOCIETY OF WISCONSIN, 1920

Abaly, W. C., Madison.
Abbott, LeRoy, Norwalk.
Abelman, T. C. H., Watertown.
Abraham, H. W., Appleton.
*Abraham, H. W., Appleton.
Ackerman, Wm., Milwaukee.
Ackley, S. B., Oconomowoc.
Adams, G. F., Kenosha.
Addleman, I. M., Wausau.
Ainsworth, H. H., Madison.
Albers, H. H., Allenton.
Alcorn, D. N., Sierra Madre, Cal.
Aldridge, H. W., Manitowoc.
Alexander, Sara W., Hudson.
Alexander, W. S., Fond du Lac.
Allen, C. F., Middleton.
Allen, Jessie P., Beloit.
Allen, L. P., Oshkosh.
Allen, Wm. J., Beloit.
Altman, Maurice, Milwaukee.
Allison, Elizabeth, Belleville, Pa.
Amundson, Karl K., Cambridge.
Amundson, Philip B., Mondovi.
Anderson, Carl M., Wild Rose.
Anderson, Harold B., Beloit.
Anderson, Jens, Racine.
Anderson, N. P., La Crosse.
Andrae, R. W., Plainfield.
Andre, F. E., Kenosha.

*Deceased.

Andrew, C. H., Platteville.
Andrew, G. F., Prairie du Chien.
Andrews, C. W., Waupaca.
Andrews, E. P., Portage.
Andrews, Malcom P., Manitowoc.
Andrews, Neil, Jr., Oshkosh.
Andrus, Dell, Ashland.
Antoine, F. J., Prairie du Chien.
Aplin, F. W., Waukesha.
Appleton, E. G. Beaver Dam.
Armbruster, B. F., Milwaukee.
Armitage, John E., Milwaukee.
Armstrong, C. A., Prairie du Chien.
Armstrong, C. E., Oconto.
Armstrong, Guy, Pound.
Arnold, F. W., Milwaukee.
Arveson, Ray, G., Frederick.
Ashley, T. W., Kenosha.
Ashum, David W., Eau Claire.
*Aubin, Jos. N., Peshtigo.
Aus, J. L. N., Deer Park.
Austria, W. F., Merrill.
Axtell, E. E., Marinette.
Axtell, Luelia E., Marinette.
Aylward, Richard C., Madison.

Baasen, J. M., Mt. Calvary.
Babcock, Frank, Cumberland.
Babcock, I. G., Cumberland.
Bach, J. A., Milwaukee.
Bachhuber, A. E., Mayville.
Bachhuber, L. M., Mayville.
Baer, A. N., Milwaukee.
Baer, C. A., Milwaukee.
Bailey, Mark A., Fennimore.
Bair, F. M., Cuba City.
Baird, John, Superior.
Baird, J. C., Eau Claire.
Baker, G. R., Tomahawk.
Baker, J. H., Bryant.
Baker, J. C., Hawkins.
Baker, W. F., Wausau.
Baldwin, F. H., Bloomington.
Baldwin, G. E., Green Lake.
Baldwin, L. H., Gillette.
Balkwill, C. A., Grafton.
Bancroft, H. V., Blue Mound.
Banfield, C. P., Mineral Point.
Banks, W. H., Hudson.
Bannen, W. E., La Crosse.
Barber, J. C., Marathon.
Bardeen, C. R., Madison.
Barnes, E. C., Ripon.
Barnes, H. T., Delafield.
Barnes, J. S., Milwaukee.
Barnette, J. R., Jr., Neenah.
Barnstein, Chas., Timothy.
Barnstein, J. E., Manitowoc.
Barrett, E. J., Sheboygan.
Barta, E. F., Milwaukee.
Barth, G. P., Milwaukee.
Bartran, W. H., Green Bay.

Batcheller, Gertrude, Madison.
*Batchelor, W. A., Milwaukee.
Bath, Dane H., Oshkosh.
Batty, A. J., Portage.
Bauch, Chas. W., Milwaukee.
Bauer, K. T., West Bend.
Baum, E. L., Milwaukee.
Baur, F. J., Wausau.
Bayer, W. H., Gleason.
Bear, W. G., Monroe.
Bechmann, C. R., Rock Island, Ill.
Beck, A. A., Coloma.
Becker, B. A., Silver Lake.
Becker, W. F., Milwaukee.
Beebe, C. M., Sparta.
Beebe, C. S., Milwaukee.
Beebe, L. W., Superior.
Beehe, P. A., Glenwood City.
Beehe, S. D., Sparta.
Beech, Geo. D., Adams.
Beffel, J. M., Milwaukee.
Beier, A. L., Chippewa Falls.
Belitz, Alfred, Pepin.
Belitz, Wm., Cochrane.
Bell, A. R., Tomah.
Bellack, B. F., Columbus.
Bellin, Jos. J., Green Bay.
Bellin, Julius J., Green Bay.
Bellis, G. L., Johnson City, Tenn.
Belting, G. W., Orfordville.
Beuder, Jesse, Ithica.
Bennett, Louis J., Ft. Atkinson.
Bennett, W. C., Denver, Colo.
Benson, G. H., Richland Center.
Bentley, J. E., Portage.
Bentzien, E. W., Milwaukee.
Berglund, S. A., Marinette.
Bernhard, A., Milwaukee.
Bertrand, J. H., De Forest.
Betz, J. C., Boscobel.
Beutler, W. F., Wauwatosa.
Beyer, H., Pittsville.
Bickel, E. F., Oshkosh.
Bill, B. J., Genoa Junction.
Bilstad, G. E., Cambridge.
Binnewies, F. C., Janesville.
Binnie, Helen A., Poynette.
Bird, H. R., Madison.
Bird, M. D., Marinette.
Black, N. M., Milwaukee.
Blackburn, F. E., Cassville.
Blair, J. C., Hazel Green.
Blanchard, C. W., Janesville.
Blankenship, R. C., Madison.
Blanton, Smiley, Madison.
Blekking, J. H., Elkhart Lake.
Blewett, M. T., Markesan.
Blumenthal, R. W., Milwaukee.
Blumer, Edw., Monticello.
Bock, Otto B., Sheboygan.
Bodden, A. M., Milwaukee.
Boerner, R. W., Milwaukee.
Boger, T. A., Milwaukee.
Bolton, E. L., Appleton.
Booher, J. S., Richland Center.
Boorse, L., Milwaukee.
Borchardt, A. C., New London.
Borden, F. R., Plainfield.
Boren, C. H., Marinette.
Boren, J. W., Marinette.
Bornstein, Max, Milwaukee.
Bossard, C., Richfield.
Bossard, M., Spring Green.
Bowen, H. P., Johnson Creek.
Bowen, R. E. W., Watertown.
Boyce, S. R., Madison.
Boyd, C. D., Kaukauna.
Boyd, G. T., Fond du Lac.
Boyer, E. R., Rhinelander.
Boynton, R. D., Kilbourn.
Bradbury, E. L., Neillsville.
Bradfield, J. A. L., La Crosse.
Bradford, E. B., Hudson.
**Bradley, H. C., Madison.
Bradley, H. E., Milwaukee.
Brady, D. L., Bloomington.
Brah, A. J., Milwaukee.
Braun, Otto, Ashland.
Braun, Robt. F., Milwaukee.
Brazeau, G. N., Milwaukee.
Breckenridge, H. E., Racine.
Breed, A. L., Elmwood.
Breeden, Roy F., Richland Center.
Brehm, H. J., Racine.
Brehm, Theodore, Racine.
Brewer, J. C., Jefferson.
Brey, P. F., Milwaukee.

*Deceased.
**Honorary.

Briggs, S. J., Madison.
Brindley, Roy, Boscobel.
Broache, A. H., Oshkosh.
Brockway, Frank, Oshkosh.
Broghammer, F. J., Superior.
Bromley, F. W., Whitewater.
Brook, J. J., Milwaukee.
Brooks, E. H., Appleton.
Brooks, L. M., Milwaukee.
Brown, A. D., Mineral Point.
Brown, E. B., Beloit.
Brown, Frank E., Milwaukee.
Brown, G. V. I., Milwaukee.
Brown, H. M., Milwaukee.
Brown, I. M., New London.
Brown, J. F., Waupun.
Brown, R. C., Milwaukee.
Brueckbaner, H. G., Sheboygan.
Brumbaugh, E. V., Milwaukee.
Brunckhorst, F. O., Hortonville.
Bryant, J. R., Wausau.
Buchanan, R. C., Green Bay.
Buck, G. C., Platteville.
Buckley, T. J., Briggsville.
Buckley, W. E., Red Granite.
Buckmaster, S. B., Janesville.
Buehler, J. W., Prairie du Sac.
Bugher, C. E., Ladysmith.
Bunch, M. M., Oshkosh.
Bunting, C. H., Madison.
Burbach, T. H., Milwaukee.
Burdon, R. M., Green Bay.
Burger, H. E., Beloit.
Burkhart, E. W., Menomonee Falls.
Burns, J. W., Oakfield.
Burton, J. J., Milwaukee.
Busse, Alfred A., Jefferson.
Butler, E. F., Mosinee.
Butler, F. E., Menomonie.

Cady, M. P., Birnamwood.
Caffrey, A. J., Milwaukee.
Cahana, Stephen, Milwaukee.
Cahoon, Roger, Baraboo.
Cairns, Rolla, River Falls.
Caldwell, H. C., St. Croix Falls.
Caldwell, Margaret, Waukesha.
Calkins, H. J., Shawano.
Callahan, J. L., La Crosse.
Calvey, P. J., Fond du Lac.
Campbell, L. A., Clear Lake.
Campbell, W. B., Waukesha.
Canavan, J. P., Winnebago.
Cantwell, W. H., Shawano.
Caples, B. M., Waukesha.
Cargill, N. W., Milwaukee.
Carhart, G. A., Milwaukee.
Carlson, E. S., La Crosse.
Carmichael, C. S., Helenville.
Carter, H. M., Madison.
Carter, R. M., Green Bay.
Carthaus, A. H. C., Thiensville.
Cary, E. C., Reedsville.
Cary, L. W., Jacksonville, Fla.
Casey, Merle, Almond.
Cassels, G. S., Pt. Washington.
Caswell, H. O., Ft. Atkinson.
Caughey, C. R., Kenosha.
Cavanaugh, T. E., Milwaukee.
Caveney, J. J., Milwaukee.
Chandler, F. E., Waupaca.
Chandler, Jos., Pardeeville.
Chaney, Eug., Milwaukee.
Chapman, F. M., Milwaukee.
Chapman, Vernon A., Milwaukee.
Charbonneau, A., Green Bay.
Charbonneau, E., Superior.
Charron, T. A., Rice Lake.
**Chase, S., Madison.
Chilson, Benj., Beloit.
Chloupek, C. J., Green Bay.
Chorlog, J. K., Madison.
*Christensen, C., La Crosse.
Christensen, Emil, Two Rivers.
Christensen, F. C., Racine.
Christenson, J. W., Westby.
*Christian, E. F., La Crosse.
Christiansen, Geo., Galesville.
Christofferson, A. L., Kenosha.
Christofferson, P. J., Waupaca.
Churchill, B. P., Milwaukee.
Clark, Burton, Oshkosh.
Clark, F. T., Waupun.
Clark, L. F., Bruce.
Clark, M. H., Ripon.
**Clark, Paul F., Madison.
Clark, R. B., Monroe.
Clark, W. T., Janesville.
*Clason, J. A., Fond du Lac.
Clawson, H. E., Red Granite.

Cleary, B. L., Edgerton.
Cleary, J. H., Kenosha.
Clement, W. J., Berlin.
Clifford, P. M., Green Bay.
Coerper, E. E., Fredonia.
Coffey, C. J., Milwaukee.
Cohn, A. H., Milwaukee.
Coleman, H. M., Barron.
Collins, D. B., Madison.
Collins, W. P., Racine.
Combacker, H. E., Osceola.
Combacker, L. C., Osceola.
Combs, C. J., Oshkosh.
Comee, William, Green Bay.
Conkey, C. D., Duluth, Minn.
Conklin, G. H., Superior.
Conley, J. M., Oshkosh.
Connell, D. R., Beloit.
Connell, F. G., Oshkosh.
Conroy, J. M., Nopeming, Minn.
Cook, C. S., Evansville.
Cook, E. H., Watertown.
Cook, F. S., Eau Claire.
Cooksey, R. T., Madison.
Coon, G. E., Milton Jct.
Coon, J. W., Stevens Point.
Cooney, Ed., Appleton.
Cooper, C. A., Colfax.
Cooper, E. S., Almond.
Copeland, Ernst, Milwaukee.
Copps, L. A., Marshfield.
Corbett, J. F., Long Beach, Cal.
Corbett, M. E., Oshkosh.
Cornwall, W. B., Amery.
Corr, Anna B., Juneau.
Corr, J. T., Racine.
Corry, F. M., Menasha.
Costello, A. E., Spooner.
Couch, E. E., West Allis.
Coumbe, W. R., Richland Center.
Cowan, W. F., Stevens Point.
Cowles, R. L., Green Bay.
Cox, J. A., Wautoma.
Cox, L. M., Milwaukee.
Cremer, C. H., Cashton.
Crikelair, F. L., Green Bay.
Cristman, E. S., Almena.
Crocket, W. W., Beloit.
Crommett, H. B., Amery.
Cron, C. O., Camp Douglas.
Crone, V. D., Beloit.
Crosby, E. P., Stevens Point.
Crowe, N. F., Delavan.
Cummings, J. H., Superior.
Cunningham, J. N., Stanley.
Cunningham, M. A., Janesville.
Cunningham, R. B., Cadott.
Cunningham, Wilson, Platteville.
Curl, Howard, Madison.
Currens, J. R., Two Rivers.
Currer, P. M., Milwaukee.
Curtin, A. L., Milwaukee.
Curtin, J. J., West DePere.
Curtis, G. E., Eau Claire.
Curtiss, F. D., Kenosha.
Cushing, Eleanore, Milwaukee.
Cushman, A. B., Milwaukee.
Cutler, J. S., Wauwatosa.
Cutter, J. D., Tomahawk.

Dailey, P. J., Elcho.
Dake, A. J., Viola.
Dallwig, H. C., Milwaukee.
Daly, F. P., Reedsburg.
Dana, A. C., Fond du Lac.
Danforth, Q. H., Omro.
Daniels, L. J., Milwaukee.
Daniels, W. N., Mosinee.
Darby, G. S., Brodhead.
Darling, Earl, Milwaukee.
Darling, F. E., Milwaukee.
Darling, Walt. G., Milwaukee.
Darling, W. H., Minneapolis, Minn.
Darling, W. S., Milwaukee.
Davelaar, G. W., Milwaukee.
Davies, R. E., Waukesha.
Davin, C. C., Kenosha.
Davis, C. H., Milwaukee.
Davis, Elmer, Richland Center.
Davis, F. A., Madison.
Dawley, G. T., New London.
Dawson, C. A., River Falls.
Dawson, D. L., Rice Lake.
Dean, J. A., Madison.
Dean, James P., Madison.
Dearholt, H. E., Milwaukee.
De Besch, J. A., Milwaukee.
Decker, C. O., Crandon.
Decker, H. J., Milwaukee.
DeCock, J. L., Angelica.

Dehne, F. E., Hilbert.
Deicher, H. F., Plymouth.
Delaney, H. O., Beloit.
Delap, R. H., Richland Center.
Del Marcelle, C. C., Neenah.
DeNeveu, A. C., Wyocena.
Denham, J. F., Boyceville.
Dennis, Jas. F., Waterloo.
Derge, H. F., Eau Claire.
DeSwarte, L. T., Beloit.
Devine, C. B., Marshall.
Devine, Hubert, Fond du Lac.
DeVoe, C. A., Berlin.
Dewey, R. F., Wauwatosa.
DeWire, M. V., Sharon.
Diamond, J. A., Frederick.
Dickenson, G. H., Milwaukee.
Differt, C. C., Milwaukee.
Dill, G. M., Prescott.
Dishmaker, D., Kewaunee.
Dodd, J. M., Ashland.
Doege, K. W., Marshfield.
Doern, R. E., Stockbridge.
Doern, W. G., Milwaukee.
Doerr, Aug., Milwaukee.
Dohearty, F. P., Appleton.
Dohearty, W. H., Peshtigo.
Domann, W. G., Menomonee Falls.
Donaldson, G. F., Shlocton.
Donnell, J. E., Cuba City.
Donnelly, F. J., Monches.
Donohue, E. J., Antigo.
Donohue, M. J., Antigo.
Donohue, W. E., Manitowoc.
Donovan, J., Milwaukee.
Doolittle, J. C., Lancaster.
Doolittle, S. W., Lancaster.
Dorr, A. M., Milwaukee.
Dougherty, C. F., Richland Center.
Doughty, P. H., Juneau.
Douglas, F. A., La Crosse.
Downing, D. F., Winnebago.
Doyle, J. H., Little Chute.
Doyle, J. N., Schofield.
Drake, F. I., Mendota.
Draper, M. H., Deerfield.
*Drew, R. J., Alma Center.
Drexel, A., Milwaukee.
Dreyer, R. A., Wheeler.
Dries, Jos., Milwaukee.
Driessel, H., Barton.
Driessel, S. J., Barton.
Drissen, W. H., Pt. Washington.
Duclos, A. A., Kilbourn.
Duer, G. R., Stoughton.
Dunn, E. A. A., Platteville.
Durner, U. J., Milwaukee.
Durr, W. E., Milwaukee.
Dwight, C. G., Madison.

Eames, H. F., Egg Harbor.
Eastman, J. R., Kenosha.
Echols, C. M., Milwaukee.
Eck, G. E., Lake Mills.
Edwards, A. C., Reedsburg.
Edwards, W. A., La Crosse.
Egan, G. J., La Crosse.
Egan, W. J., Milwaukee.
Egland, G. R., Sturgeon Bay.
Egloff, L. W., Pewaukee.
Ehmer, J. W., Lomira.
Eickelberg, F. A., Reesville.
Eichelberger, W. W., Rockford, Ill.
Eidam, L. W., La Crosse.
Ekblad, V. E., Superior.
Elfers, J. C., Sheboygan.
Ellenson, E. P., Chippewa Falls.
Elliott, E. S., Fox Lake.
Elliott, J. T., Rhinelander.
Elliott, R. S., Green Bay.
Ellis, W. E., White Lake.
Ellis, W. H., Amidon, No. Dak.
Elmergreen, R., Milwaukee.
Elsom, J. C., Madison.
Elvis, E. B., Medford.
Engsberg, W. A., Lake Mills.
Ennis S. A. J., Shullsburg.
Epley, O. H., New Richmond
Erdlitz, F. J., Peshtigo.
Erdman, C. H., Stanley.
Erickson, H. C., Stanley.
Ernst, G. R., Milwaukee.
Evans, C. A., Milwaukee.
Evans, E., La Crosse.
Evans, E. P., Milwaukee.
Evans, J. S., Madison.
Evans, Owen, Bangor.
Eyster, J. A. E., Madison.

*Deceased.

Faber, C. A., Milwaukee.
Fairchild, R. J., Embarrass.
Fairfield, W. E., Green Bay.
Falk, V. S., Stoughton.
Farnsworth, A. L., Baraboo.
Farnsworth, F. B., Janesville.
Farr, J. F., Eau Claire.
Farrell, A. M., Two Rivers.
Faulds, R. C., Abrams.
Fazen, L. E., Racine.
Fechter, F. J., Elkhart Lake.
Federman, E. H., Montello.
Federspiel, M. M., Milwaukee.
Fellman, G. H., Milwaukee.
Felter, Edw., Plymouth.
Fenelon, C. D., Phillips.
Festerling, E. G., Reedsville.
Fickes, H. C., Owen.
Fidler, C. A., Milwaukee.
Fiebiger, G. J., Waterloo.
Fiedler, O. A., Sheboygan.
Field, F. T., Elroy.
Fifield, G. W., Janesville.
Finney, W. H., Clintonville.
Fisher, R. F., Wausau.
Fitzgerald, J. J., Eagle.
Fitzgerald, R. E., Milwaukee.
Fitzgibbon, W., Milwaukee.
Fitzpatrick, M. L., Milwaukee.
Flanagan, G. J., Kaukauna.
Flatley, M. A., Antigo.
Fleck, J. L., Brodhead.
Fleming, E. E., Wausau.
Fletcher, E. A., Milwaukee.
Fletcher, Wm., Salem.
Fleury, F. D., Omro.
Flynn, L. H., Eau Claire.
Flynn, R. E., La Crosse.
Foat, J. S., Ripon.
Foerster, H. R., Milwaukee.
Foerster, O. H., Milwaukee.
Foley, F. P., Dorchester.
Foley, L. J., Milwaukee.
Folsom, W. H., Fond du Lac.
Ford, W. B., Milwaukee.
Forkin, G. E., Menasha.
Fortier, C. A. H., Milwaukee.
Fortner, W. H., Princeton.
Fosse, B. O., Beloit.
Foster, J. H. A., Cornell.
Fowle, F. F., Wauwatosa.
Fowle, I. H., Milwaukee.
Fowler, J. H., Lancaster.
Fowzer, L. R., Manawa.
*Fox, G. W., Milwaukee.
Fox, Paul A., Beloit.
Fox, Phillip, Madison.
Fox, P. R., Madison.
Francois, S. J., New Glarus.
Frank, J. H., Milwaukee.
Franklin, I., Milwaukee.
Franklin, S. N., Milwaukee.
Franzel, J. E., Ft. Atkinson.
Frawley, R. M., Wausau.
Frawley, W. J., Appleton.
Freeman, Jos., Wausau.
Freudenberg, J. A., Markesan
Frew, J. W., Milwaukee.
Frey, F. H., Wausau.
Frey, P. G., Milwaukee.
Frick, Lewis, Athens.
Friedrich, R. O., Milwaukee.
Friend, L. J., Merrill.
Froggatt, W. E. L., Cross Plains.
Fuldner, Louis, Milwaukee.
Fuller, C. O., Polar.
Fulton, H. A., Eau Claire.
Fulton, W. A., Burlington.

Gaenslen, F. J., Milwaukee.
Gallagher, E. E., La Crosse.
Gallogly, M. J., Milwaukee.
Galloway, A. D., Clayton.
Ganser, W. J., Madison.
Garrett, S. L., La Crosse.
Gates, A. J., Tigerton.
Gathman, Henry, Milwaukee.
Gates, Eugene, Two Rivers.
Gault, J. A., Lancaster.
Gavin, S. E., Fond du Lac.
Gendron, A. E., River Falls.
Genter, A. E., Sheboygan.
Gephart, C. H., Kenosha.
Gerend, A., Milladore.
Germano, G., Kenosha.
Giesen, C. W., Superior.
Gifford, H. B., Juda.
Gilbert, H. A., Madison.
Gilles, A. S., Winnebago.
Gillespie, W. W., Milwaukee.

Gillette, H. E., Pardeeville.
Gillis, J. P., Polar.
Gimson, Esther, Wis. Veterans Home.
Glasier, M. B., Bloomington.
Gleason, C. M., Oconomowoc.
Guagi, W. B., Monroe.
Gobar, G. G., Muscoda.
Goddard, J. B., Eau Claire.
Godfrey, Jos., Lancaster.
Godfrey, Rush, Lancaster.
Goggins, G. F., Wrightstown.
Goggins, R. J., Ocouto Falls.
Golden, C. H., Wonewoc.
Golley, F. B., Milwaukee.
Goodfellow, J. R., Superior.
Gordon, J. B., Shawano.
Gordon, J. S., Milwaukee.
Gorst, Chas., Madison.
Gosin, F. J., Green Bay.
Gramling, H. J., Milwaukee.
Gramling, J. J., Milwaukee.
Graner, L. H., Coleman.
Grannis, I. V., Menomonie.
Gratiot, C. C., Shullsburg.
Gratiot, Wm. M., Mineral Point.
Graves, L. S., Wilton.
Gray, A. W., Milwaukee.
Gray, R. H., La Crosse.
Gray, W. K., Milwaukee.
Greeley, H. P., Madison.
Green, M. K., Mendota.
Green, W. A., Wausau.
Greenberg, H., Milwaukee.
Greenwood, S. D., Neenah.
Gregory, A. T., Elroy.
Gregory, D. H., West DePere.
Gregory, Frank, Valders.
Gregory, W. W., Stevens Point.
Grinde, G. A., Cumberland.
Griswold, C. M., Clintonville.
Griswold, F. L., Mazomanie.
*Griswold, G. W., Alma Center.
Grob, A. R. F., Milwaukee.
Grosskopf, E. C., Milwaukee.
Grotjan, Wm. F., Milwaukee.
Ground, W. E., Superior.
Grove, W. E., Milwaukee.
Groves, R. J., Lodi.
Gudex, V. A., Eau Claire.
Gunderson, A., La Crosse.
Gunderson, C. A. S., Madison.
Gunderson, G., La Crosse.
Gunther, Emil, Sheboygan.
Gunther, Otto, Sheboygan.
Gunther, T. J., Sheboygan.
Gunther, Wm. H., Sheboygan.
Gutsch, O. J., Sheboygan.
Guttman, Paul, Kellnersville.
Guy, J. E., Milwaukee.
Guyton, E. A., Eau Claire.

Habhegger, C. J., Watertown.
Hackett, J. H., Milwaukee.
Hadley, D. A., Oconomowoc.
Hageman, F. H., Milwaukee.
Haight, A. L., Crystal Falls, Mich.
Hake, Cecil B., Milwaukee.
Hall, M. W., Ft. Sam Houston, Tex.
Hall, S. S., Ripon.
Halsey, R. C., Lake Geneva.
Hambley, T. J., Hurley.
Hamilton, D. B., Dodgeville.
Hammond, A. W., Beaver Dam.
Hammond, F. W., Manitowoc.
Hanko, J. E., Loganville.
Hanko, Mary E., Plain.
Hankwitz, P. G., Milwaukee.
Hanley, W. J., Kenosha.
Hansen, John, Glenbeulah.
Hansen, R. T., Milwaukee.
Hanson, J. W., Milwaukee.
Hanson, W. C., Racine.
Harbert, Helen, Kenosha.
Hardgrove, J. H., Eden.
Hardy, C. F., Milwaukee.
Hargarten, L. J., Milwaukee.
Harkins, J. P., Forest Junction.
Harlow, G. A., Milwaukee.
Harper, C. A., Madison.
Harper, Carl, Madison.
Harrington, T. L., Milwaukee.
Harris, F. M., Fond du Lac.
Harris, L. M., Superior.
Harter, A. F., Marathon.
Hartman, L. J., Menomonie.
Hartman, R. C., Janesville.
Harvey, J. R., Footville.
Harvie, W. D., Oshkosh.
Hastings, J. F., Kenosha.
Haubrick, H. J., Oshkosh.

Hausberry, P. H., Hillsboro.
Haushalter, H. P., Milwaukee.
Hausmann, N. E., Kewaskum.
Haven, W. S., Racine.
Haveus, F. Z., Waupun.
Hayes, C. A., Chippewa Falls.
Hayes, D. J., Milwaukee.
Hayes, E. P., Eau Claire.
Hayes, E. S., Eau Claire.
Hayman, C. S., Boscobel.
Hayman, L. H., Pasadena, Cal.
Hayward, J. C., Marshfield.
Head, L. R., Madison.
Hecker, Wm., Beloit.
Hedges, A. N., Faribault, Minn.
Heeb, H. J., Milwaukee.
Heffron, J. J., Milwaukee.
Hefty, C. A., New Glarus.
Hegner, G. T., Appleton.
Heiden, H., Sheboygan.
Heidner, A. H., West Bend.
Heim, R. R., Minneapolis, Minn.
Heising, A. F., Menomonie.
Heldt, T. J., Waukesha.
Helgeson, E. J., Evansville.
Helm, Arthur C., Beloit.
Helm, Ernest C., Beloit.
Helm, Harold M., Beloit.
Helz, J. W., Fond du Lac.
Henderson, M. L., Milwaukee.
Hendrickson, H., Green Bay.
Henika, G. W., Madison.
Henke, W. A., La Crosse.
Henney, C. W., Portage.
Hennig, E. L., Mt. Vernon, Ill.
Henriehsen, J. A., Larsen.
Heraty, J. A., Milwaukee.
Heraty, J. E., La Crosse.
Hernandez, J. A., Linden.
Herner, W. L., Milwaukee.
Herrick, E. L., Kenosha.
Hertzman, C. O., Ashland.
Hervey, J. A., Milwaukee.
Hess, C. F., Madison.
Hieks, L. N., Burlington.
Hidershide, G. N., Arcadia.
Higgins, E. G., Melrose.
Higgins, S. G., Milwaukee.
Hilger, W. F., Milwaukee.
Hill, W. B., Rectory, Va.
Hilliard, H. G., Winona.
Hilton, G. F., Sturgeon Bay.
Hinckley, H. G., Merrill.
Hines, L. L., Rockbridge.
Hinn, L. P., Fond du Lac.
Hipke, G. A., Milwaukee.
Hipke, Wm., Marshfield.
Hirsehboeck, J. G., Forestville.
Hitz, H. B., Milwaukee.
Hodges, F. L., Monroe.
Hodgson, A. J., Waukesha.
Hoermann, R. B., Milwaukee.
Hoffman, E. E., Sharon.
Hoffman, G. H., Milwaukee.
Hoffman, J. G., Hartford.
Hoffman, Leo, Campbellsport.
Hoffman, P. A., Campbellsport.
Hoffmier, L. A., Superior.
Hogan, J. H., Racine.
Hogan, J. M., Oshkosh.
Hogue, G. I., Milwaukee.
Holbrook, A. T., Milwaukee.
Holding, A. F., Madison.
Hollenbeck, N. W., Milwaukee.
Holliday, Marion E., Oshkosh.
Holm, J. H., Kenosha.
Holmes, B. H., Racine.
Holtz, H. M., Beaver Dam.
Holz, A. P., Seymour.
Hopkins, Minnie, Oconto.
Hopkinson, D., Milwaukee.
Horsewell, U. M., Wausaukee.
Hosmer, M. S., Ashland.
Houek, Mary P., La Crosse.
Hougen, Ed., Grand Rapids.
Hough, A. G., Madison.
Hovde, A. G., Superior.
Howell, E. C., Fennimore.
Howlson, N. L., Menomonie.
Hoyer, A. A., Randolph.
Hoyer, G. C., Milwaukee.
Hoyme, G., Eau Claire.
Hoyt, G. E., Menomonee Falls.
Hubenthal, J. C., Belmont.
Huber, G. W., Minoequa.
Hudek, D. F., Princeton.

*Deceased.
**Honorary.

Huenuekens, Jos. H., Milwaukee.
Huff, F. C., Sturgeon Bay.
Hughes, C. W., Winneconue.
Hughes, J. R., Dodgeville.
Hugo, D. G., Oshkosh.
Hulburt, F. D., Reedsburg.
Hull, E. S., Milton Jct.
Hummel, W. J., Ablemans.
Hunt, E. M., Weyauwega.
Hunt, F. O., Fall River.
Hunt, Ida M., Weyauwega.
Hurd, H. H., Chippewa Falls.
Hurth, O. J., Cedarburg.

Ingersoll, R. S., Madison.
Irvine, W., Manawa.
Irwin, H. J., Baraboo.
Ishmael, O. E., Mt. Horeb.
Ison, G. W., Crandon.
Iverson, M., Stoughton.

Jackey, F. D., Thorp.
Jackson, Edw., Milwaukee.
Jackson, F. A., Eldorado.
Jackson, J. A., Mosinee.
Jackson, J. A., Jr., Madison.
Jackson, R. H., Madison.
Jacobs, E. C., Durand.
Jacobs, S. A., Milwaukee.
Jacobson, V. C., Boston, Mass.
James, A. W., Muscoda.
Jamieson, Geo., Lone Rock.
Jamieson, R. D., La Crosse.
Jardine, E. W., Alma.
Jeffers, Dean, West Salem.
Jefferson, H. A., Clintonville.
Jegi, H. A., Galesville.
Jensen, A. B., Menasha.
Jermain, H. F., Milwaukee.
Jermain, L. F., Milwaukee.
Jewell, T. M., Mindoro.
Jobse, W. P., Milwaukee.
Johnson, A. T., Sauk City.
Johnson, A. W., Milwaukee.
Johnson, Fred, Eau Claire.
Johnson, F. G., Iron River.
*Johnson, F. P., Ontario.
Johnson, H. B., Tomah.
Johnson, H. C., Bruce.
Johnson, J. C., Ogdensburg.
Johnson, James E., Holmen.
Johnson, Laura M., Boston, Mass.
Johnston, G. B., Abbottsford.
Johnston, H. E., Oshkosh.
Johnston, W. M., Fairwater.
Johnston, W. W., Racine.
Jones, A. W., Randolph.
Jones, David T., Wausau.
Jones, E. H., Weyauwega.
Jones, J. C., Milwaukee.
Jones, M. L., Wausau.
Jones, R. W., Wausau.
Jones, Susan, Racine.
Jorgensen, P. P. M., Kenosha.
Judge, T. A., Milwaukee.
Juergens, L. W., Milwaukee.
Junck, J. A., Sheboygan.

Kahn, Jos., Milwaukee.
Kalling, H., Black River Falls.
Kappelmann, F. W., Milwaukee.
Karnopp, G. L., Mishicott.
Karsten, A. C., Horicon.
Kastner, A. L., Milwaukee.
Katz, H. M., Cedarburg.
Kaumheimer, G. J., Milwaukee.
Kay, H. M., Madison.
Kaysen, Ralph, Milwaukee.
Keech, J. S., Racine.
Keenan, Harry, Stoughton.
Keenan, T. P., Lake Geneva.
Keithley, J. A., Palmyra.
Keithley, John W., Beloit.
Keland, G. A., Madison.
Keland, H. B., Racine.
Keller, J. M., St. Louis, Mo.
Keller, S. C., Sauk City.
Kellner, V. V., Maribel.
Kellog, E. W., Milwaukee.
Kelly, D. M., Baraboo.
Kelly, F. H., Merrill.
Kelly, John, Cato.
Kelly, W. W., Green Bay.
Kemper, W. G., Manitowoc.
Kenney, C. J., Milwaukee.
Kenney, G. F., Milwaukee.
Kersten, A. M., Los Angeles, Cal.
Kersten, N. M., De Pere.
Kettelhut, E. J., Milwaukee.
Keyes, T. B., Chicago, Ill.

Kiefer, J. G., Milwaukee.
King, G. F., Green Bay.
Kiugs, J. S., Watertown.
Kinne, Edw., Elkhorn.
Kispert, R. M., Green Bay.
Kissinger, C. A., Melrose.
Kissling, A. C., Milwaukee.
Kitzke, F. W., Milwaukee.
Klein, J. T., Milwaukee.
Kleinboehl, J. W., Milwaukee.
Kleinhans, F. A., Milwaukee.
Kleinhans, M. A., Milwaukee.
Kleinschmidt, H. W., Oshkosh.
Knapp, E. J., Rice Lake.
Knauf, A. J., Sheboygan.
Knauf, F. P., Kiel.
Knauf, G. E., Sheboygan.
Knauf, N. J., Chilton.
Knowles, W. L. M., Spooner.
Knox, C. S., Superior.
Knox, E. S., Green Bay.
Knutson, Oscar, Osseo.
Koeh, H. C., Sharon.
Koeh, M. J., Milwaukee.
Koch, V. W., Janesville.
Koehler, A. G., Oshkosh.
Koehler, J. P., Milwaukee.
Korthals, F. J., Milwaukee.
Kosanke, F. E., Watertown.
Kovats, F. C., Milwaukee.
Kradwell, W. T., Wauwatosa.
Krahn, A. J., Beaver Dam.
Krahn, G. W., Oconto Falls.
Kratsch, A. W., Milwaukee.
Kraut, Elgie, Lancaster.
Kreitzer, A. J., Sawyer.
Kremers, Alex, Milwaukee.
Kreutzer, A. G., Milwaukee.
Kriz, G. H., Milwaukee.
Krohn, H. C., New Holstein.
Kron, L. O., Menomonie.
Krueger, B., Cudahy.
Krumme, S. A., Fond du Lac.
Krygiar, A. A., Milwaukee.
Kulig, A. H., Independence.
Kunny, B., Baldwin.
Kyes, S. M., Owen.
Kyllo, J. C., Superior.

LaBreck, F. A., Eau Claire.
Lacey, S. W., Footville.
Lademann, O. E., Milwaukee.
Ladewig, H. C., Baraboo.
Ladwig, W. A., Wausau.
Laird, J. J., Black Creek.
Lalor, J. C., Sauk City.
Lambeck, F. J., Milwaukee.
Lang, Jacob, Milwaukee.
Langenfeld, P. F., Theresa.
Langland, P., Milwaukee.
Lansdowne, F. B., Kenosha.
Larsen, G. A., Hayward.
Larsen, L. A., Colfax.
Latham, C. O., Green Bay.
Lauder, C. E., Viroqua.
Laughlin, D. M., Milwaukee.
Law, W. G., Ashland.
Lawhorn, C. C., Milwaukee.
Lawler, C. F., Hilbert.
Lawler, G. W., Sussex.
Lawler, T. S., Lyndon Station
Lawrence, G. H., Stevens Point.
Layton, O. M., Fond du Lac.
Leahy, J. D., Butternut.
Leaper, W. E., Green Bay.
LeCron, W. L., Milwaukee.
Lee, J. H., Madison.
Lee, M. A., Superior.
Leeson, F. W., Beloit.
Lehukering, C. F., Darlington.
Leicht, Philip, Lake Mills.
Leitch, G. W., Milwaukee.
Leitzell, P. W., Benton.
Leland, A. M., Whitewater.
Lemmel, J. T., Albany.
Lemmer, G. M., Spooner.
Lemon, C. H., Milwaukee.
Lenfesty, J. P., De Pere.
Leonnard, C. W., Fond du Lac.
Lester, W. A., Onalaska.
Lettenberger, Jos., Milwaukee.
Levitas, I. E., Green Bay.
Lewis, C. H., Milwaukee.
**Lewis, Dean, Chicago.
Lewis, J. M., Bloomington.
Lewis, Louis, Milwaukee.
Lid, T. A., Marinette.
Liefert, Wm. C., Milwaukee.
Lillie, O. R., Milwaukee.
Lindores, J. D., Stevens Point.

Lindsay, W. T., Madison.
Linger, E. A., Oconto.
Linn, W. N., Oshkosh.
Lintleman, F. R., Janesville.
Lippitt, S. H., Milwaukee.
Little, W. D., Maiden Rock.
Lohedan, E. T., Milwaukee.
Lochemes, W. T., Milwaukee.
Lockhart, C. W., Mellen.
Lockhart, J. W., Oshkosh.
Loevenhart, A. S., Madison.
Loge, E. S., Milwaukee.
Lohmiller, R. K., Superior.
Longley, J. R., Fond du Lac.
Loomis, E. E., Janesville.
Loope, T. E., Iola.
Looze, A. J., Stevens Point.
Looze, J. J., Grand Rapids.
Lorenz, W. F., Mendota.
Lothrop, C. A., Wis. Veterans Home.
Lotz, Oscar, Milwaukee.
Loughnan, A. J., Oconomowoc.
Love, G. E., Waukesha.
Ludden, H. D., Mineral Point.
Ludwig, O. P., La Crosse.
Lueck, G. W., La Crosse.
Luhmann, F. S., Manitowoc.
Lumley, W. A., Ellsworth.
Lumsden, Wm., Menomonie.
Lundmark, L. M., Ladysmith.
Lyman, J. V. R., Eau Claire.
Lynch, D. W., West Bend.
Lynch, H. M., Allenton.

McCabe, P. G., Fond du Lac.
McCallin, A. E., Waupaca.
McCallister, G. H., Avoca.
McCann, Edith, Milwaukee.
McCarey, A. J., Green Bay.
McCarthy, G. W., Kenosha.
McCarthy, H. C., Richland Center.
McCarty, E. L., Knapp.
McChesney, W. M., Edgerton.
McClure, G. H., Westboro.
McComb, I. N., Brillion.
McCorkle, S. C., Milwaukee.
McCormick, H., New Auburn.
McCormick, W. C., Tomahawk.
McCoy, L. L., Madison.
McCracken, J. O., Kenosha.
McCracken, R. W., Union Grove.
*McCrory, T. J., Racine.
McCutcheon, W. R., Thorp.
McDonald, H. F., Hollendale.
McDougall, G. T., Fond du Lac.
McDowell, A. J., Soldiers Grove.
McEachern, W. A., Superior.
McGarty, M. A., La Crosse.
McGauley, F. M., Fond du Lac.
McGill, P. J., Superior.
McGonigal, M., Loyal.
McGovern, J. J., Milwaukee.
McGovern, P. H., Milwaukee.
McGrath, E. F., Appleton.
McGrath, Edw., Barahoo.
McGuire, W. H., Janesville.
McHugh, F. T., Chippewa Falls.
McIndoe, T. B., Rhinelander.
McKee, F. W., Richland Center.
McKeon, P., New Richmond.
McKivett, W., Milwaukee.
McKnight, G. B., Fond du Lac.
McLaughlin, H. J., Bloomington.
McMahon, F. B., Milwaukee.
McMahon, H. O., Milwaukee.
McMahon, J. P., Milwaukee.
McNary, John, Milwaukee.
McNaughton, W. T., Milwaukee.
McNevins, E. S., Green Bay.
McNicholas, L. T., La Crosse.
McRae, J. D., Chippewa Falls.
McRae, M. F., Milwaukee.
Maas, W. C., Rio.
MacArthur, D. S., La Crosse.
Macaulay, E. M., Wausau.
MacCollum, C. L. R., Manitowoc.
MacCormack, E. A., Whiteball.
MacCormack, R. L., Blair.
*MacDonald, Edw., Cuba City.
MacDonald, W. H., Lake Geneva.
MacGregor, S. A., Westfield.
Mack, J. A., Madison.
MacKechnie, R. S., Hillsboro.
MacKinnon, G. E., Prentice.
Mackoy, F. M., Milwaukee.
MacLachlan, W. G., McFarland.
MacLaren, J. B., Appleton.
MacLaughlin, H. E., Waupaca.

*Deceased.
**Honorary.

MacMillan, A. E., Stevens Point.
Madison, J. D., Milwaukee.
Maechtle, E. W., West Allis.
Maes, C. G., Kimberly.
Majerus, P. J., Ft. Atkinson.
Malkin, G. M., Los Angeles, Cal.
Malloy, N. J., Northville, Mich.
Malloy, T. E., Random Lake.
Malone, F. A., Waterford.
Malone, T. C., Milwaukee.
Malone, W. F., Milwaukee.
Marek, F. B., Racine.
Marrs, F. A., Stevens Point.
Marsden, T. H., Fennimore.
Marshall, F. P., Fond du Lac.
Marshall, V. F., Appleton.
Martens, W. A., Milwaukee.
Mason, C. H., Superior.
Mason, E. L., Eau Claire.
Mason, G. F., Milwaukee.
Mason, V. A., Marshfield.
Mast, B. W., La Crosse.
Mathesou, A., Neillsville.
Mathiesen, J., Eau Claire.
Matthews, J. B., Milwaukee.
Mauermann, J. F., Monroe.
Maurer, A. A., La Crosse.
Maxson, F. S., Milwaukee.
May, J. V., Marinette.
Mayfield, A. L., Kenosha.
Meachem, J. G., Jr., Racine.
Meachem, J. G., Sr., Racine.
Meacher, B. C., Portage.
Meade, F. S., Madison.
Meany, J. E., Manitowoc.
Mears, G. V., Fond du Lac.
**Meek, W. J., Madison.
Mehigan, D. D., Milwaukee.
Meiklejohn, D. V., Fond du Lac.
Melaas, W. G., Beloit.
Melster, W. H., Milwaukee.
Mensing, E., Milwaukee.
Merten, A. N. E., Milwaukee.
Merten, P. J., Milwaukee.
Mesch, A. A., Saukville.
Messmer, Clemens, Milwaukee.
Meusel, Harry, Oshkosh.
Meyer, E. E., Brillion.
Meyer, H. C., Necedah.
Meyer, R. C., New Holstein.
Meyers, C. E., North Freedom.
Meyers, E., Superior.
Meyers, J. M., Superior.
Meyst, C. H., Milwaukee.
Middletou, W. S., Madison.
Midelfart, H. C., Eau Claire.
*Midgley, A. E., Whitewater.
Mieding, A. E., Milwaukee.
Milbee, H. H., Marshfield.
Millard, F. D., Milwaukee.
Miller, E. A., Clintonville.
Miller, E. W., Milwaukee.
Miller, H. C., Whitewater.
Miller, Thos., Oconomowoc.
Miller, W. J., La Valle.
Miller, W. S., Madison.
Mills, N. P., Appleton.
Minahan, J. J., St. Nazianz.
Minahan, J. R., Green Bay.
Minahan, P. R., Fond du Lac.
Minahan, R. E., Green Bay.
Mishoff, I. D., Milwaukee.
Mitchell, E. J., Brodhead.
Mitchell, F. W., Ogema.
Mitchell, R. E., Eau Claire.
Mitchell, S. R., Milwaukee.
Mock, F. C., Milwaukee.
Moe, H. B., Blanchardville.
Moeller, J., Milwaukee.
Moeller, M. W., Milwaukee.
Moffat, H. L., Arpin.
Mollinger, S. M., Milwaukee.
Monk, R. W., Neillsville.
Monroe, W. B., Monroe.
Monstad, J. W., New London.
Montgomery, A., Milwaukee.
Montgomery, R. C., Madison.
Montgomery, Wm., Minneapolis, Minn.
Moore, E. E., Merrillan.
Moore, G. E., Antigo.
Moore, G. W., Antigo.
Moore, L. A., Monroe.
Moore, W. N., Appleton.
Moraux, Felix, Luxemburg.
Morgan, J. J., Durand.
Morgan, Mary E., Superior.
Morgenroth, H. W., Oshkosh.
Mork, Ole, Blair.
Morley, F. E., Viroqua.

Morris, E. K., Merrill.
Morris, R. C., Ft. Atkinson.
Morris, Sarah J., Madison.
Morrison, M., Casbton.
Morrison, W. W., Edgerton.
Morse, E. A., Appleton.
Mortenson, O. N., Grand Rapids.
Morter, C. W., Milwaukee.
Morter, R. E., Milwaukee.
Morton, H. H., Cohb.
Moyer, S. R., Monroe.
Muckerheide, A. J., Milwaukee.
Mudroch, J. A., Columbus.
Mueller, W. E., Shawano.
Mulvaney, F. M., Marion.
Munger, D. C., Ellsworth.
Munkwitz, F. H., Milwaukee.
Munn, W. A., Janesville.
Murphy, E. C., Wilmot.
Murphy, E. R. F., Antigo.
Murphy, G. F., Stratford.
Murphy, S. W., Kenosha.
Murphy, W. J., Milwaukee.
Muth, Carl, Sheboygan.
Myers, I. A., Cottage Grove.
Myrick, A. L., DeSota.

Nadeau, A. T., Marinette.
Nadeau, E. G., Green Bay.
Nainka, A., Boaz.
Nair, Belle P., Winnebago.
Nason, W. C., Ripon.
Nauth, D. F., Kiel.
Nedry, G. C., Medford.
Nedry, H. M., Medford.
Neilson, G. W., Milwaukee.
Neilson, W. H., Milwaukee.
Nelson, A. L., Racine.
Nelson, A. N., Clear Lake.
Nelson, N. O., Madison.
Nelson, O. O., Arcadia.
Nelson, R. N., Horicon.
Nelson, W. V., Milwaukee.
Netvig, G. A., Prairie Farm.
Newell, Frank, Burlington.
Newell, G. W., Burlington.
Newman, E. C., Berlin.
Newman, Robt., Chicago.
Newton, J. E., Hudson.
Nicely, W. E., Waukesha.
Nichols, F. C., Wausau.
Nichols, R. M., Sheboygan Falls.
Nichols, W. T., Milwaukee.
Nicholson, J. D., Milltown.
Nims, C. H., Oshkosh.
Nixon, H. G. B., Hartland.
Nixon, R. T. A., Brookfield.
Nohle, J. B., Waukesha.
Nohles, B. O., Milwaukee.
Noer, Julius, Berkeley, Cal.
Noer, P. J., Wabeno.
Nolan, W. N., Kaukauna.
Nolte, L. G., Milwaukee.
North, C. F., Beaver Dam.
Nothohm, W. R., Dousman.
Nott, G. W., Racine.
Nowack, L. H., Watertown.
Noyes, G. B., Stone Lake.
Nuzum, Frank, Janesville.
Nuzum, T. W., Janesville.
Nuzum, W. F., Baraboo.
Nye, F. T., Beloit.
Nystrum, C. E., Medford.

O'Brien, J. M., Oregon.
O'Brien, T., St. Nazianz.
O'Brien, W. T., Ashland.
O'Connell, D. C., Milwaukee.
O'Connell, J., Watertown.
O'Connell, J. E., Milwaukee.
O'Connor, W. F., Ladysmith.
O'Leary, T. J., Superior.
Oakland, R. G., Milwaukee.
Oatway, W. H., Waukesha.
Oherembt, B., Milwaukee.
*Obertin, C. A., Union Grove.
Oettiker, Jas., Platteville.
Ogden, H. V., Milwaukee.
Ohswald, H. F., Oconto Falls.
Oliver, C. H., Cambridge.
Oliver, T. J., Green Bay.
Olmsted, A. O., Green Bay.
Olson, A. K., Ettrick.
Olson, C., Racine.
Olson, E. A., Osseo.
Omsted, Nils, Stoughton.
Orchard, H. J., Superior.
Orr, E. D., Mt. Hope.
Orton, Susanne, Darlington.
Ottow, A. F., Beloit.

Ouellette, C. J., Oconto.
Overbaugh, J. H., Hartland.
Ovitz, E. G., Laona.
Owens, W. H., Milwaukee.
Ozanne, I. E., Neenah.
Ozanne, J. T., Oshkosh.

Packard, C. D., Rhinelander.
Palm, C. A., Kenosha.
Palmer, C. W., Cassville.
Palmer, J. A., Arcadia.
Palmer, W. H., Janesville.
Palt, Jos., Kenosha.
Panetti, E. J., Milwaukee.
Panetti, P. A., Hustisford.
Park, W. H., Glenwood City.
Parke, Geo., Viola.
Parker, A. S., Clinton.
Parker, T. G., Union Grove.
Parmenter, E. L., Camp Travis, Tex.
Partridge, O. F., Mattoon.
Paschen, J. G., Milwaukee.
Patek, A. J., Milwaukee.
Payne, A. L., Eau Claire.
Pearce, W. J., Dodgeville.
Pearson, L. M., Tomahawk.
Pease, W. A., Jr., Rio.
*Pease, W. A., Sr., Doylestown.
Peck, W. W., Darlington.
Peebles, Mary, Shullsburg.
Peehn, F. G., Corliss.
Pegram, J. W., Milwaukee.
Pelton, L. H., Waupaca.
Pember, J. F., Janesville.
Pembleton, W. E., Wittenberg.
Pennoyer, N. A., Kenosha.
Perrin, G. H., Menomonee Falls.
Perrin, H. E., Star Prairie.
Perry, Gentz, Amery.
Peters, H. A., Oconomowoc.
Peterson, C. F., Independence.
Peterson, E. F., Wauwatosa.
Peterson, G. E., Waukesha.
Peterson, R. O., Racine.
Petzke, E. A., Hixton.
Pfeffer, E. N., Milwaukee.
Pfeifer, C. W., Sheboygan Falls.
Pfeifer, F. J., New London.
Pfeifer. H. A., Jackson.
Pfeil, R. C., Milwaukee.
Pfeiler, A. G., Sheboygan Falls.
Pfister, Franz, Milwaukee.
Pfisterer, F. W., Markesan.
Phaneuf, S. J., Somerset.
Phillips, Clara M., Madison.
Philipps, T. C., Milwaukee.
Pickering, C. R., Muscoda.
Pickett, S. L., Bayfield.
Pierson, P. R., Readstown.
Pinkerton, W. T., Prairie du Chien.
Pippin, B. C., Excelsior.
Pitz, M. N., Neenah.
Pleyte, A. A., Milwaukee.
Pomainville, Frank, Grand Rapids.
Pomainville, Geo., Nekoosa.
Pope, F. J., Racine.
Pope, F. W., Racine.
Poppe, Alfred, Friendship.
Poser, E. M., Columbus.
Post, C. C., Barron.
Potter, J. Y., New London.
Potter, L. A., Superior.
Potter, R. P., Marshfield.
Powell, J. J. Galesville.
Powers, C. D., Kingston.
Powers, H. W., Milwaukee.
Powers, J. W., Milwaukee.
Pratt, Maud, Spring Brook.
Prees, G. W., Cambria.
Prees, R. L., Cambria.
Prill, J. H., Chetek.
Prince, L. H., Sparta.
Pritchard, J. F., Manitowoc.
Proctor, T. C., Sturgeon Bay.
Prouty, W. A., Burlington.
Pugh, G. A., Kenosha.
Pugh, Wm., Kenosha.
Pullen, A. J., No. Fond du Lac.
Puls, A. J., Milwaukee.
Purcell, H. E., Madison.
Purtell, E. J., Milwaukee.
Purtell, J. A., Milwaukee.

Quade, E. B. Wausau.
Quam, Jacob, Deerfield.
Quick, E. W., Milwaukee.
Quin, J. F., Milwaukee.
Quinn, R. B., Darlington.

*Deceased.

Raasock, H., Nelsonville.
Radloff, A. C., Plymouth.
Ragan, W. F., Milwaukee.
Ragan, W. J., Shawano.
Randall, M. W., Blue River.
Rasmussen, Hans, Milwaukee.
Rath, R. R., Granton.
Rathert, E. T., Chilton.
Ravn, E. O., Merrill.
Ravn, M., Merrill.
Raymond, R. G., Brownsville.
Rea, A. L., Chippewa Falls.
Read, Flora, Fond du Lac.
Reagles, Robt., Arlington.
Reay, G. R., La Crosse.
Rector, A. E., Appleton.
Reddick, G. H., Wabeno.
Redelings, L. H., Marinette.
Redelings, T. J., Marinette.
Reeve, J. S., Appleton.
Reeves, S. T., Albany.
Regan, E. D., Milwaukee.
Rehorst, J. J., Fond du Lac.
Reich, H. C., Sheboygan.
Reich, W. F., Milwaukee.
Reichert, J. E., West Bend.
Reineck, C., Appleton.
Reineking, H., Milwaukee.
Reineking, W. C., Statesan.
Reinert, E. N., Cleveland.
Reinhardt, J. P., Fountain City.
Reinhart, D. B., Merrill.
Reis, G. W., Junction City.
Remer, W. H., Chaseburg.
Reynolds, Bertha, Lone Rock.
Reynolds, J. C., Lake Geneva.
Rheineck, A. F., Milwaukee.
Rhode, H. P., Green Bay.
Rihenack, G. A., Bloomer.
Rice, C. W., Delavan.
Rice, D. S., Stevens Point.
Rice, E. M., Milwaukee.
Rice, F. A., Delavan.
Rice, M. H., Gresham.
Rice, R. H., Milwaukee.
Richards, C. A., Rhinelander.
Rick, J. B., Mishicott.
Ridgman, A. L., Grand Rapids.
Riehl, F. W., Milwaukee.
Riley, P. E., Eau Claire.
Ringo, H. F., Montreal.
Riopell, W. G., Thorp.
Riordan. J. F., Berlin.
Ripley, G. H., Kenosha.
Ripley, H. M., Kenosha.
Ritchie, G. A., Appleton.
Robb, J. J., Green Bay.
Robbins, G. H., Madison.
Roberts, D. W., Milwaukee.
Roberts, J. A., Portage.
Robinson, H. A., Kenosha.
Roby, H. S., Milwaukee.
Rock, J. N., Milwaukee.
*Rodermund, A. N., Athens.
Roethke, R. W., Milwaukee.
Rogers, A. W., Milwaukee.
Rogers, E. H., Stevens Point.
Rogers, F. C., Oconomowoc.
Rogers, P. F., Milwaukee.
Rolfs, T. H., Milwaukee.
Rollefson, C. J., Superior.
Rood, J. F., Darlen.
Rose, Felix, Coleman.
Rose, J. F., Lena.
Rosenberry, A. B., Wausau.
Rosenheimer, M. A., Fox Lake.
Rosholt, J. A., La Crosse.
Ross, G. L., Kenosha.
Ross, H. R. T., Ladysmith.
Ross, J. M., Bloom City.
Ross, P. M., Milwaukee.
Roth, W. C., Franksville.
Rothman, L., Wittenberg.
Rouse, H. A., Browntown.
Rowles, J. A., La Crosse.
Rowley, A. G., Middleton.
Rowley, C. C., Winnebago.
Ruckle, W. M., Grand Rapids.
Rudolf, S. F., Green Bay.
Rueth, J. E., Milwaukee.
Ruethen, K. A., Ridgeland.
Rugh, R. E., Racine.
Ruhland, G. C., Milwaukee.
Rundell, Annie S., Beloit.
Rupp, L. G., Sullivan.
Ruschaupt, L. F., Milwaukee.
Russell, Frank, Weyauwega.
Russell, F. G., Milwaukee.
Russell, H. C., Milwaukee.
Ryan, C. E., Appleton.
Ryan, D. J., Neenah.
Ryan, E., Sheboygan.
Rydell, C. B., Superior.

Salter, H. G., Cascade.
Saltzstein, H. C., Milwaukee.
Sandhorn, M. J., Appleton.
Sanders, J. B., Beaver Dam.
Sandin, N. V., Amery.
Sarazin, F. C., Superior.
Sargent, H. W., Milwaukee.
Sargent, J. C., Milwaukee.
Sarles, W. T., Sparta.
Sarvela, H. L., Superior.
Sathe, M. R., Viroqua.
Sattre, O. M., Rice Lake.
Sauerhering, D. L., Wausau.
Saunders, Geo., Superior.
Sauthoff, Aug., Mendota.
Sauthoff, Mary, Mendota.
Savage, G. F., Pt. Washington.
Savage, G. T., Milwaukee.
Sayle, R. G., Milwaukee.
Sayles, L. W., Baraboo.
Scantleton, J. M., Sparta.
Schaefer, C. O., Racine.
Schaper, H., Appleton.
Schee, John, Westby.
Scheer, G. H., Sheboygan.
Scheid, M. M., Rosendale.
Schein, J. E., Oshkosh.
Schell, Ida L., Milwaukee.
Scheurich, L. G., Tomah.
Schiller, L., Milwaukee.
Schlag, R. A., Prairie du Sac.
Schlegel, H. T., Wausau.
Schlenker, G. H., Menomonie.
Schlesselman, G. H., Taylor.
Schlueter, U. A., Milwaukee.
Schmeling, A. F., Columbus.
Schmidt, E. S., Green Bay.
Schmidt, F. M., Eagle.
Schmidt, H. E., Milwaukee.
Schmidt, J. A., Brillion.
Schmit, A. I., Beloit.
Schmitt, F., Milwaukee.
Schmitt, G., Milwaukee.
Schmitt, Louis, Milwaukee.
Schmitt, Phil., Milwaukee.
Schmitz, W. C., Manitowoc.
Schneider, F., New London.
Schneider, J. F., Oshkosh.
Schneider, Jos., Milwaukee.
Schnell, W. H., Superior.
Schnug, Max, Durand.
Schoen, C., Milwaukee.
Schoen, R. E., Beaver Dam.
Scholter, E. W., Milwaukee.
Scholz, G. M., Milwaukee.
Schoofs, J. J., Fond du Lac.
Schoofs, O. P., Malone.
Schram, C. F. N., Beloit.
Schreiner, J. K., La Crosse.
Schriber, E. L., Franksville.
Schroeckenstein, R. S., Marion.
Schroeder, E. L., Shawano.
Schroeder, H. F., Marinette.
Schulberg, P. A., Maiden Rock.
Schuldt, C. M., Platteville.
Schulz, F. M., Wauwatosa.
Schwalbach, C. G., Juneau.
Schwartz, A. B., Milwaukee.
Schwartz, B. J., Kenosha.
Schwartz, Rollin, Chippewa Falls.
Schwarz, S. G., Humbird.
Schweitzer, G. J., St. Cloud.
Scollard, J. T., Milwaukee.
Scott, B. E., Berlin.
Scott, H. E., Argyle.
Scott, J. R., Appleton.
Seaman, G. E., Milwaukee.
Searle, D. R., Superior.
Sears, H. B., Beaver Dam.
Seeger, S. J., Milwaukee.
Seelman, J. J., Milwaukee.
Seemann, W. O., Eau Claire.
Seiberth, J., Lugerville.
Seidel, J. G., Warrens.
Seiler, G. A., Monroe.
Senn, C. U., Ripon.
Senn, F. C., Oshkosh.
Senn, Geo., De Pere.
Senn, U., Milwaukee.
Sexton, W. G., Marshfield.
Seymer, L. A., Wauwatosa.
Shafferzick, Chas., Denver, Col.
Sharpe, H. A., Verona.
Shaw, A. O., Ashland.
Shaw, B. W., Waunakee.
Shaw, J. L., Manitowoc.

Shaykett, F. E., Brandon.
Shearer, A. T., Edgerton.
Shearer, F. E., Edgerton.
Shearer, R. D., Milwaukee.
Sheehy, T. J., Tomah.
Sheldon, C. S., Madison.
Sheldon, W. H., Madison.
Shepherd, E. L., Brandon.
Shepherd, W. A., Seymour.
Sherman, Adin, Winnebago.
Sherwood, M. W., Milwaukee.
Shimek, A. J., Manitowoc.
Shinnick, T. F., Beloit.
Shockley, H. O., Darlington.
Sibree, H. C., Sturgeon Bay.
Sidler, A. C., Cudahy.
Sieker, A. W., Franklin.
Siekert, H. P., Milwaukee.
Sifton, H. A., Milwaukee.
Silverthorn, F. R., Indiana Harbor, Ind.
Simon, L. J., Fond du Lac.
Simones, V. L., La Crosse.
Simons, N. S., Taylor.
Simpson, J. E., Endeavor.
Sincock, H. A., Odanah.
Sivertson, Martin, La Crosse.
Sivyer, A. W., Milwaukee.
Sizer, E. M. A., Eau Claire.
Skemp, A., La Crosse.
Skwor, C. J., Neosho.
Sleyster, Rock, Wauwatosa.
*Smedal, G., La Crosse.
Smedal, E., La Crosse.
Smiles, C. J., Ashland.
Smiley, R. B., Stevens Point.
Smith, A. D., Gilmanton.
Smith, C. E., Amherst.
Smith, C. M., Jr., Evansville.
Smith, D. S., La Crosse.
Smith, E. A., Milwaukee.
Smith, E. V., Fond du Lac.
Smith, G. L., Jefferson.
Smith, G. M., Chippewa Falls.
Smith, J. C., Beloit.
Smith, Jos. F., Wausau.
Smith, J. W., Milwaukee.
Smith, K. W., Madison.
Smith, R. C., Superior.
Smith, S. M., Milwaukee.
Smith, S. M. B., Wausau.
Smith, T. D., Neenah.
Snodgrass, T. J., Janesville.
Solberg, A. A., Coon Valley.
Soles, F. A., Spencer.
Sommers, J. C., Madison.
Sonnenburg, C. N., Sheboygan.
Sorenson, S., Racine.
Southwick, F. A., Stevens Point.
Spawn, M. G., Beloit.
Speck, J. T., Park Falls.
Spencer, G. F., Brooklyn.
Spencer, L. E., Wausau.
Sperry, S. B., Milwaukee.
Sperry, W. P., Phillips.
Spiegelberg, E. H., Boscobel.
Spitz, M. M., Milwaukee.
Sporleder, Otto, Reedsburg.
Squire, C. A., Sheboygan.
Stack, G. F., Independence.
Stack, S. S., Milwaukee.
Staehle, Max, Manitowoc.
Stalker, H. J., Kenosha.
Stanley, W. S., Milwaukee.
Stannard, G. H., Sheboygan.
Starnes, Brand, Mauston.
Starr, F. W., Stanley.
Stebbins, W. W., Madison.
Steele, G. A., Oshkosh.
Steele, G. M., Oshkosh.
Steffen, I. D., Antigo.
Steffen, L. A., Antigo.
Stemper, Irene G., Milwaukee.
Stephenson, W. L., Ladysmith.
Steuck, A. F., Two Rivers.
Stevens, F. E., Bristol.
Steves, B. J., Menomonie.
Stewart, F. W., Wheeler.
Stewart, W. C., Kenosha.
Stiennon, O. A., Green Bay.
Stiles, V. W., Sparta.
Stirn, F. J., Dubuque, Ia.
Stockman, B. G., Woodville.
Stoddard, C. H., Milwaukee.
Stoelting, C. W., Oconto.
Stoland, I., Eau Claire.
Stoltz, C. E., Milwaukee.
Stovall, W. D., Madison.

*Deceased.
**Honorary.

Stoye, J. P., Theresa.
Stratton, F. A., Milwaukee.
Strauss, F., Milwaukee.
Strong, R. G., Beloit.
Stubenvoll, C. E., Shawano.
Studley, F. C., Milwaukee.
Stuesser, C. N., Ashippun.
Suiter, F. C., La Crosse.
Sullivan, A. G., Madison.
Sullivan, E. S., Madison.
Sullivan, J. D. Kenosha.
Sullivan, J. T., Milwaukee.
**Sullivan, W. E., Madison.
Sullivan, W. J., Superior.
Sure, J. H., Milwaukee.
Surenson, M., Viroqua.
Sutherland, C. H., Janesville.
Sutherland, F. E., Janesville.
Sutter, E. H., Milwaukee.
Suttle, H. J., Viroqua.
Swarthout, E. C., La Crosse.
Sweemer, Wm., Milwaukee.
Sykes, H. D., Milwaukee.
Sykes, L. G., Milwaukee.
Sylvester, Homer, Madison.

Tanner, E. E., Milwaukee.
Tarnutzer, B. C., Los Angeles, Cal.
Tarter, J. W., Iron River.
Tasche, C. T., Sheboygan.
Tasche, J. T., Sheboygan.
Taugher, A. J., Milwaukee.
Taugher, J. P., Milwaukee.
Taugher, P. J., Marathon.
Taugher, V. J., Marathon.
Taylor, A. R., Brodhead.
Taylor, E. A., Racine.
Taylor, F. B., Madison.
Taylor, J. G., Milwaukee.
Taylor, L. L., Waupun.
Taylor, R. W., Pewaukee.
Taylor, W. A., Portage.
Teich, Wm., Cecil.
Teitgen, A., Manitowoc.
Terhorst, H., Milwaukee.
Terlinden, J. H., Bonduel.
Teschan, R. C., Milwaukee.
Thackery, R. C., Racine.
Thalhimer, Wm., Milwaukee.
Tharinger, E. L., Milwaukee.
Thayer, F. A., Beloit.
Thielke, G. A., Wausau.
Thienhaus, C. O., Milwaukee.
Thill, D. P., Milwaukee.
Thomas, J. S., Milwaukee.
Thomas, W. O., Clinton.
Thompson, A. S., Mt. Horeb.
Thompson, B. V., Oshkosh.
Thompson, G. E., Kenosha.
Thompson, I. F., Madison.
Thompson, J. B., Wittenberg.
Thompson, R. D., Reedsburg.
Thompson, W. L., Madison.
Thompson, W. L., Sheboygan.
Thomson, W. J., Portage.
Thorndike, Wm., Milwaukee.
Thorne, J. P., Janesville.
Thrane, A. D. H., Eau Claire.
Tibbits, U. J., Waukesha.
Tillson, E. M., Milwaukee.
Timm, E. W., Milwaukee.
Tisdale, L. C., Milwaukee.
Titel, E. A., Greenleaf.
Tkadlec, Jos., Cazenovia.
Tompach, Emil, Racine.
Toner, T. J., Kenosha.
Toothaker, J. E., Algoma.
Tormey, A. R., Madison.
Tormey, T. W., Madison.
Torpy, T. G., Minocqua.
Towne, W. H., Shiocton.
Townsend, E. H., Jr., New Lisbon.
Townsend, E. H., Sr., New Lisbon.
Townsend, Elma J., Madison.
Trancklе, H. M., Bloomer.
Traxler, P. S., Oakfield.
Treadwell, C. L., Faith, So. Dak.
Treat, C. R., Sharon.
Treglown, L. H., Livingston.
Trentzch, M. W., Highland.
Trevitt, Margaret, Wausau.
Trowbridge, C. H., Viroqua.
Trowbridge, Wm., Viroqua.
Tryon, F. E., Merrimac.
Tuffley, F. S., Boscobel.
Tupper, E. E., Eau Claire.
Twohig, D. J., Fond du Lac.
Twohig, H. E., Fond du Lac.
Twohig, J. Elmer, Fond du Lac.
Tyvand, J. C., Whitehall.

Unkrich, C. R., Whitewater.

Valentine, L. P., Racine.
Van Altena, Jr., L. A., Cedar Grove.
Van der Ven, J. M., Milwaukee.
Van Hengel, G. L., Waupun.
Van Kirk, F. W., Janesville.
Van Schaick, R. E., Caroline.
Van Valzah, Robt., Madison.
Van Zanten, Wm., Sheboygan.
Vedder, H. A., Marshfield.
Vedder, J. B., Marshfield.
Venning, J. R., Bagley.
Verbeck, S. F., Lodi.
Ver Meulen, J. R., Waupun.
Vernon, S. G., Madison.
Vogel, C. A., Elroy.
Vogel, C. C., Elroy.
Voight, O. P., Gillette.
Voje, J. H., Oconomowoc.
Von Beust, M., Milwaukee.
Von Buddenbrock, E., Racine.
Von Neupert, Carl, Jr., Stevens Point.
Von Neupert, Carl, Sr., Stevens Point.
Voshurg, W. H., Denmark.
Voskuil, Anthony, Cedar Grove.

Wade, F. S., New Richmond.
Wadey, B. J., Belleville.
Wagner, N. B., Racine.
Wahl, C. M., Spring Green.
Wahl, H. S., Wausau.
Wahle, G. H., Fond du Lac.
Waite, W. S., Kendalls.
Wakefield, G. F., West Salem.
Wakefield, S. R., West Salem.
Walbridge, F. E., Stevens Point.
*Walbridge, J. S., Berlin.
Walch, F. C., Black Creek.
Waldschmidt, J. W., Fond du Lac.
Waldschmidt, W. J., Fond du Lac.
Walker, F. W., St. Croix Falls.
Walker, L. G., Pound.
Wallis, J. H., Barron.
Walsh, C. C., Merrill.
Walters, D. N., Fond du Lac.
Warfield, L. M., Milwaukee.
Was, Edward, Oostburg.
Washburn, R. G., Milwaukee.
Washburn, W. H., Milwaukee.
Waters, Don, Grand Rapids.
Waters, Hugh, Nekoosa.
Watson, F. V., Antigo.
Waufle, G. C., Janesville.
Weaver, L. A., Iron Belt.
Webb, E. P., Beaver Dam.
Webb, W. B., Beaver Dam.
Weber, H. F., Newburg.
Webster, B. N., Rice Lake.
Webster, F. E., Amherst.
Wedge, A. H., Cambria.
Wegge, W. F., Milwaukee.
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Weideman, W. G., Milwaukee.
Weingart, W. F., Milwaukee.
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Werner, Nels, Barron.
Werner, R. F., Eau Claire.
Westgate, H. J., Rhinelander.
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Wetzler, S. H., Milwaukee.
Whalen, G. E., Milwaukee.
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White, A. S., Rice Lake.
White, R. M., Prairie du Chieu.
White, W. E., Burlington.
Whitehorn, E. E., Vesper.
Whitney, D. C., Rice Lake.
Whyte, W. F., Madison.
Wichman, G. C., Rib Lake.
Wiesender, A. J., Berlin.
Wiger, H. C., Dallas.
Wilcox, A. G., Solon Springs.
Wiles, G. B., Sheboygan.
Wiley, F. S., Fond du Lac.
Wilkinson, J. A., Hales Corners.
Wilkinson, M. R., Oconomowoc.
Wilkowski, C. W., Chippewa Falls.
Willard, L. M., Wausau.
Williams, A. J., Waukesha.
Williams, H. H., Sparta.

Williams, R. L., Statesan.
Williams, S. E., Chippewa Falls.
Williams, W. B., Argyle.
Williams, W. E., Cambria.
Williamson, G. H., Neenah.
Wilson, C. J., Winchester.
Windesheim, G., Kenosha.
Wing, W. S., Oconomowoc.
Winneman, F. A., Merrill.
Winslow, F. R., Baraboo.
Winter, A. E., Tomah.
Witte, W. C. F., Milwaukee.
Wittman, A. R., Merrill.
Witzpalek, W. W., Algoma.
Wochos, F. J., Green Bay.
Wolf, H. E., La Crosse.
Wolff, J., Milwaukee.
Wolfgram, O. J., Lyons.
Wolter, H. A., Green Bay.
Wolters, H. F., Milwaukee.
Wood, F. C., Waupaca.
Woodhead, F. J., Waukesha.
Wooli, G. K., Janesville.
Wright, E. A., New Richmond.
Wright, F. R., West Allis.
Wright, J. C., Antigo.

Yaffe, Aaron, Milwaukee.
Yanke, A. E., Milwaukee.
Yates, C. A., Bangor.
Yates, J. L., Milwaukee.
Youmans, L. E., Mukwonago.
Young, A. F., Wauwatosa.
Young, G. H., Elkhorn.
Young, J. H., Elkhorn.
Young, M. L., Ashland.
Young, Will, Ft. Atkinson.

Zelimer, C. E., Madison.
Ziegier, E. J., Oxford.
Ziegler, J. E. B., Eau Claire.
Zierath, W. F., Sheboygan.
Zilisch, W. E., Wausau.
Zimmerman, Amelia, Batavia, Ill.
Zimmermann, C., Milwaukee.
Zimmermann, W. C. L., Reedsburg.
Zinns, A. J., Milwaukee.
Zivnuska, J. F., Milwaukee.
Zohlen, J. P., Sheboygan.
Zwaska, A. B., Rockton, Ill.
Zwiekey, W. H., Superior.

BOOK REVIEWS

Hygiene: Dental and General. By Turner. C. V. Mosby Co. 1920.

Thus far no text has been presented that will give to the dentist a more comprehensive knowledge of hygiene that he may apply to his everyday needs, than is found in the first edition of "Hygiene: Dental and General." Besides dealing with hygiene of the mouth, there are many different aspects of general hygiene and environmental factors that affect the general health with which the dentist comes in contact, and which in turn contribute to the welfare of the teeth, that it follows that, in the practice of his profession, he is not only concerned with hygiene of the mouth, but should have a definite knowledge of general hygiene of which the former can only be a part.

In the chapter on "Oral Prophylaxis," several pages are devoted to "Septic Teeth as a Source of Systemic Disease." While we all agree that the removal of septic teeth is often followed by marked improvement in general, yet the reviewer wishes that several pages had been given to the present day evils in tooth restoration. Probably no one method of restoring lost tooth structure has done more damage than the gold shell crown.

The first five and the eighth chapters are devoted to dental and personal hygiene. The next two discuss the new science of disease prevention and essential facts of "Immunity," followed by one on "Communicable Diseases." From the tenth through the thirteenth chapters the author takes up such subjects as "Public Health Administration," "Food Control," "Water Supply and Water Disposal."

In the last few years there have been great and extensive improvements in our school hygiene, and this is also rapidly increasing in industry. Both of these subjects are well discussed in their respective chapters. The last chapter covers the subjects of "Ventilation, Heating, and Lighting."

In Appendix A there is a reprint on the "Control of Communicable Diseases" from the American Public Health Association, while Appendix B gives certain facts relative to the use and action of various disinfectants.

The author has condensed in the foregoing a vast amount of information on every phase of hygiene, without detail or confusion, so that his work should receive a hearty welcome by those practitioners and students who have a practical interest in the fundamentals of hygiene.

M. N. F.

The Endocrines. By Samuel Wyllis Bandler, M. D. Octavo of 486 pages. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $7.00.

No work issued in recent years will be received with more interest than Dr. Bandler's new publication on the endocrines, for no subject has been more puzzling to the profession and with none have we struggled more earnestly for light. What is known of the endocrine glands is bearing more than sufficient root to form a working basis for the understanding of many of our hereditary, physical and psychic questions. Only by therapy and the use of the extracts of these glands can we be led to definite conclusions.

Every physician has in his hands the material with which he can lend aid in research along these lines, but he should understand the basic principles of endocrinology and Dr. Bandler's work furnishes these. There has been too much of a tendency on the part of many of the profession to depend on the manufacturing pharmacists for enlightenment on the subject. Literature issued by them has been notoriously unreliable and misleading, and Dr. Bandler's new work is issued at a time when there is a real demand for something authoritative on the subject.

Of special interest, in 22 chapters teeming with good things, are the chapters on the internal secretions, the endocrines in gynecology, puberty and the menopause, pregnancy and labor, mental and nervous defects, the autonomic nervous system and therapeutic suggestions concerning the endocrines. One chapter is given to clinical teaching on the Cabot plan. This work is unqualifiedly recommended to every physician.

The Radiography of the Chest. Vol. I. Pulmonary Tuberculosis with 9 line diagrams and 99 radiograms. By Walter Overend, M. D., London, England. C. V. Mosby Co., St. Louis. 1920. Price, $5.00.

This new work will prove a welcome addition to a subject which has been receiving more and more consideration in the past few years. The work is concise and yet thoroughly covers the subject. It is beautifully and very completely illustrated and is deserving of a place in the library of every man engaged in this diagnostic procedure.

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EDITORIALS

OUR NEW PRESIDENT.

DUE to the death of Dr. H. W. Abraham of Appleton, President-elect, Dr. M. A. McGarty of La Crosse, First Vice-President, succeeds to the presidency of the State Medical

Society of Wisconsin for the coming year.

Dr. McGarty was born at Mauston, Wis., June 21, 1890. He graduated from the Mauston High School and did college work at St. Thomas College, St. Paul, from 1906 until 1908. He graduated from the Marquette University School of Medicine, class of 1912, and was an interne at the Milwaukee County Hospital under the service of Dr. L. M. Warfield from June, 1912, until April, 1914.

Dr. McGarty located in La Crosse in 1914 and has been associated with Drs. Edward Evans and W. E. Bannen since that time. He did postgraduate work at the Johns Hopkins Hospital, Baltimore, in 1915, and at the Harvard Medical School in 1916.

He enlisted in the Medical Corps of the United States Army in June, 1917, and was discharged in January, 1919, serving at Fort Riley on the heart and lung board, at Fort Oglethorpe in the service of Dr. Edward Martin, Philadelphia; in the surgical service at Walter Reed Hospital, at the Rockefeller Institute, and at the Mayo Clinic.

Dr. McGarty is the youngest man to serve as president of the State Medical Society of Wisconsin, but those who know him and know his sterling qualities will look forward with confidence to an administration which will compare with any.

DUES FOR 1921.

YOUR 1921 dues are payable now! Unless paid by February first, the Constitution and By-Laws provide that you will be suspended, and you are not eligible for protection under the medical defense.

In previous issues of the Journal the necessity of raising the dues two dollars has been explained.

Increased printing costs have made this necessary and are explained in full in the Proceedings of the House of Delegates, published in this issue (see report of Managing Editor). If you have not paid your 1921 dues, write your secretary today, enclosing the same. The important work of the Society can only be carried on by the prompt co-operation of all of its members.

LEST WE FORGET.

(From the Constitution and By-Laws of your County Society.)

Article II.—Purposes of the Society.

The purpose of this Society shall be to bring into one organization the physicians of ——— county; so that by frequent meetings and full and frank interchange of views they may secure such intelligent unity and harmony in every phase of their labor as will elevate and make effective the opinions of the profession in all scientific, legislative, public health, material and social affairs, to the end that the profession may receive that respect and support within its own ranks and from the community to which its honorable history and great achievements entitle it; and with other county societies to form the Wisconsin State Medical Association, and through it, with other state associations, to form and maintain the American Medical Association.

Chapter II.—Powers and Duties.

Section 1.—This Society shall have general direction of the affairs of the medical profession of the county, and its influence shall be constantly exerted to better the scientific, material and social condition of every physician within its jurisdiction. Systematic efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every reputable physician in the county.

Sec. 4.—This Society shall endeavor to educate its members to the belief that the physician should be a leader in his community, in character, in learning, in dignified and manly bearing, and in courteous and open treatment of his brother physicians, to the end that the profession may occupy that place in its own and the public estimation to which it is entitled.

THE LEGISLATIVE SESSION OF 1921.

AT THE coming session of the Legislature of the State of Wisconsin, certain bills are sure to be presented, and the menacing feature of some of these will call for the united opposition of all members of the profession in the state.

The Committee on Public Policy and Legislation of the State Medical Society will watch these bills carefully as they are introduced, but to successfully oppose them it will be necessary to have the united support of the state profession. Each county medical society is urged to appoint a subcommittee to co-operate with the state committee. Do this at once! It is important! Advise Dr. Edward Quick, Wells Building, Milwaukee, chairman of the state committee, of those in your county on whom he may call for support.

THE DECEMBER JOURNAL.

THE late appearance of the December issue of the Journal was occasioned by the United States postoffice department changing its routing on this class of mail service. Advance notice was not given us until the regular time for mailing and a delay of more than two weeks was occasioned, awaiting the instructions of the Milwaukee postoffice. The late appearance of the Journal was unavoidable.

THE JOURNAL CLINIC

Edited and Published by
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UNIVERSITY EXTENSION DIVISION
The University of Wisconsin.

ADENO—CARCINOMA OF THE UTERUS.

CLINIC OF C. HENRY DAVIS, M. D.,
MILWAUKEE.

While malignant disease of the corpus uteri is less common than that of the cervix the diagnosis is more difficult. The lesion is beyond the touch of the examining finger and there are no symptoms which may be regarded as characteristic. We usually think of bleeding in connection with the diagnostic symptoms, but an extensive carcinoma may develop without any loss of blood. The subjective signs and symptoms may be so slight that a woman will not consult her physician until they have been present for many months.

Two cases which have come under my observation during the last few months are of particular interest from the point of diagnosis and treatment. The first patient could only be treated by radium owing to the severity of her cardiac disease; the second was operated, but came near dying from myocarditis. Whenever possible a pan-hysterectomy is the treatment of choice for this type of cancer. When the operation is performed early the prognosis is favorable and the immediate mortality relatively low. Cases which cannot be operated because of other complications may be treated with radium with more hopes of cure than is usually the case with cervical cancer.

Case I. Mrs. W., aged 63, seen in consultation July 8, 1920. She complained of a yellow vaginal discharge which had been present most of the time since having a little bloody discharge one year ago.

The family history is unimportant, both parents having died of old age; a brother of apoplexy (?) at age 36, and a sister of some "stomach trouble," aged 32.

The patient was married in 1884. The husband is living and well, except for a high blood pressure. A son was delivered normally thirty years ago. She has had no miscarriages.

As a child she had scarlet fever and mumps. Since childhood her health has been unusually good except for some pelvic trouble just after the World's Fair in Chicago. At that time she had bearing down sensations and could not walk for some time. The history of this trouble is not clear.

Menstruation appeared at about 15; was always regular 28 day type and lasted from four to seven days. She usually had a headache but no pain. Her last regular flow was about nine years ago.

Since the cessation of her menses there had been no bleeding until the summer of 1919, when a little bloody discharge caused her to see her physician. He found a slight irritation of the cervix and gave a few local treatments. The bleeding entirely stopped, but a slight yellowish discharge persisted. Early in June of this year she passed a little blood while walking. Following this there was a slight increase of the discharge, but no more bleeding. She complains of a little soreness at times in the lower abdomen, but no distinct pain. She tires easily and cannot walk as well as formerly. There is no urinary disturbance. Bowels are fairly regular. There is no complaint of headache or backache.

Examination showed her to be a rather stout white woman, with an old mitral regurgitation and a blood pressure of 220 (palpatory). The abdomen was somewhat pendulous because of excessive fat. External genitalia were negative. The vagina showed senile atrophy and admitted two fingers with difficulty. It was found to be markedly narrowed near the vault. Palpation showed a somewhat softened but normal sized cervix. The uterus could not be definitely outlined owing to the thick abdominal wall, but was thought to be of about normal size and consistency. Inspection of the cervix revealed a congested mucosa.

Because of the general condition and lack of findings it was thought possible that there was a cervical discharge kept up by the high blood pressure, and expectant treatment was advised until such time as the heart was in better condition and the blood pressure lower. A week later the heart showed very definite decompensation and the blood pressure was found to be 226-126, auscultatory. During the next ten weeks the patient remained in bed most of the time, under the care of Drs. Holbrook and Egan. There was a gradual improvement of the heart. With rest the blood pressure dropped until after a month's time it reached 138-74, auscultatory. However, as soon as she was permitted up there was a moderate increase. The discharge continued and at times showed more blood, indicating the presence of serious uterine pathology rather than an oozing from sclerotic vessels. The last of September it was believed that the heart would stand the strain of an anesthetic and she was taken to St. Mary's Hospital for curretage and radium treatment.

The curretage, September 30th, under gas-oxygen-ether anesthesia showed that she undoubtedly had a carcinoma of the corpus uteri. Fifty mg. of radium screened with brass and rubber was inserted for a total of 1200 mg. hours. Sections showed the tissue to be that of an adenocarcinoma. One week later 100 mgs. radium, screened as before, except for a reduction in the thickness of brass and increase in that of rubber, was inserted for 2400 mg. hours. Twelve days later 77½ mgs. radium with needles in tandem screened with brass and rubber, was inserted for 1163 mg. hours, making a total dosage of 4763 mg. hours, of radium in a period of three weeks.

The patient was very nauseated during the radium treatments, the nausea increasing toward

the end of the treatment. The heart rate was increased by the nausea and there was more or less irregularity. Following each application of radium there was a moderate increase in the leucocyte count, the greatest being after the 2400 mg. dosage when the count was 15,900 just after the removal of the radium. There was an increase in the percentage of polynuclear leucocytes and a corresponding reduction in the percentage of lymphocytes. The white count returned to normal within about thirty-six hours after the removal of the radium.

Two weeks after the last radium treatment, she developed an edema of the right leg which persisted for nearly two weeks. She also developed a little bladder irritability with negative urinary findings. Three weeks after the last treatment a metal female catheter was passed into the cervix to insure that drainage was not impaired.

In this case the heart would not permit a hysterectomy. Radium will undoubtedly control the carcinoma for some months. We believe that death will most likely result from heart failure or apoplexy, rather than from the direct effects of the carcinoma.

Case 2. Mrs. A., widow, aged 58, seen in consultation October 15, 1920. Her chief complaint was incontinence of urine, and the minor complaints nervousness and insomnia.

The family history is negative, the father having died of old age and the mother of apoplexy or heart failure. She has a brother and a sister living and well.

She was married in 1882. The husband died of bowel obstruction and weak heart after an illness of one day in 1907. She never became pregnant.

As a child she had the ordinary diseases of childhood. In 1889 and again in 1907 she had a fever which was diagnosed as typhoid. One year ago she had a heart attack and was in bed for several weeks. Last May she had a severe bronchial cold, but remained in bed only two days. She states that since childhood she has been of a nervous temperament. Since her husband's death the nervousness has been worse and of late she has had insomnia. She had a "weak bladder" as a child and continued to wet the bed until six years old.

The present *incontinence of urine* began in the late winter or early spring. At first there was only a few drops, just enough to soil her clothing. But now she must wear pads night and day. She goes to the toilet at frequent intervals during the day and gets up one or more times each night. She has never had any pain or burning on urination. She has no pain except from attacks of intercostal neuralgia when very tired. This is always relieved by resting. She has no headaches and very little backache. Bowels are usually regular. Her general health has been good except for the heart attack of last year. She tires easily of late. Appetite is good and her weight stationary. At times she has had "rheumatic pains" in her hands and knee joints.

Menstruation began when 14 years old. It was always a little irregular, coming as often as every three weeks. The pain was always severe, and the flow scanty. Menopause symptoms began at 45. During the next five years she hemorrhaged about once per year, the flow being profuse for two days, but continuing for as long as two months. There has been no bleeding during the past eight years. She had very little discomfort from hot flushes.

The patient is a well nourished Jewish woman. The general examination made by Dr. Ogden was negative except for a slight enlargement of the heart and a faint systolic murmur heard at the apex and transmitted out. There was also tenderness in the right lower quadrant of the abdomen.

My notes on the pelvic examination are as follows: The urethral orifice appears normal. The vagina admits two fingers with difficulty owing to senile atrophy. The cervix is small, lying in the axis of the vagina and lower than normal. The cervix is normal in consistency, but appears to contain a small polypus. The uterus is retroverted, a little enlarged and irregular in outline, due to the presence of small tumors. The right adnexa is enlarged to about the size of a goose egg. The left adnexa is about normal size. Inspection showed a very small mucus polypus in the cervix which was crushed in an attempt to remove it for section. It is thought that the supposed urine may be a serous discharge from the uterus. Blood pressure 132-80. Urine analysis showed a trace of albumen and a few hyaline casts. No blood or pus was noted.

Six days later the patient returned for additional examination and advice. A speculum was inserted and the cervix again inspected. It was found to be quite moist. After drying with cotton, a drop of clear fluid would again appear in the os in a comparatively short time. After this had been

repeated several times a dry tampon was inserted. The patient was given a clean pad and instructed to return in a few hours. Five hours later the pad was only slightly soiled whereas the pad worn to the office that morning had become saturated in about three hours. On removal the tampon was found to be saturated.

This test showed that the supposed incontinence of urine was in reality a serous discharge from the uterus. Additional questioning revealed that the discharge had been gradually increasing in amount. It was now certain that there was a malignant tumor of the corpus uteri. Dr. Ogden believed that the heart would stand the strain of an operation so a pan-hysterectomy was advised. The blood count showed 4,900,000 red and 7,500 white cells.

November 4, 1920, a pan-hysterectomy was performed at Mt. Sinai Hospital. The uterus was found to be moderately enlarged with several small leiomyomata. The right ovary was very hard, kidney shaped, and as large as a goose egg. The left ovary was small and sclerotic. Both tubes were small, but apparently normal. A single enlarged lymph gland was found along the right ovarian artery at the level of the common iliac vessels. On opening the uterus a shaggy, friable growth about the size of an English walnut was found coming from the mucus lining of the corpus. Section of the right ovarian tumor showed it to be very firm and to contain a calcified area near the middle.

Miscroscopic diagnosis:

Adeno-carcinoma of the corpus uteri.

Several small leiomyomata of the corpus uteri.

Leiomyoma of the right ovary.

No evidence of malignancy in the lymph gland.

Following the operation the patient appeared to be in very good condition for two days and then she developed myocardial symptoms with marked irregularity of the heart. Dr. Ogden put her on tincture digitalis and the condition was gradually relieved. During the first two weeks she voided about twenty-four times daily. The urine showed traces of albumen, and a few hyaline and granular casts. She was discharged from the hospital in good condition December 3, 1920. The prognosis is good as regards the carcinoma.

This case was of unusual interest to me because the patient's one complaint was *incontinence of urine.* She never realized that the supposed urine came from the vagina until after the tampon test.

THE DIFFERENTIAL DIAGNOSIS IN ABDUCENS PARALYSIS.

BY GEORGE N. BRAZEAU, M. D.,

MILWAUKEE.

Ocula Motor disturbances occupy an important and well-defined place in the symptomatology of disease. No pretense is made here to analyze all the various motor troubles, and their significance, since the subject is too comprehensive for the scope of this paper, therefore I have chosen to limit these observations to the sixth nerve, the Abducens.

This long nerve, in its devious path to the external rectus muscle of the eye, is particularly exposed to the ravages of disease and the influence of traumatisms about and within the skull, owing to its close proximity to bony structures and tissues so often involved. Its principal symptoms are either permanent or transitory motor troubles with their corresponding deviations in the positions of the eye-ball. The two principal causes affecting this nerve are the fractures at the base of the brain and syphilis. The differential diagnosis between these two co-existing conditions will be the purpose of this paper.

That this subject may not be considered in the abstract, I have elected to report a case of abducens paralysis in a subject suffering from both a basal fracture and cerebral syphilis. The fracture was diagnosed about the time of the injury, but the syphilis passed unnoticed until two years later, when he consulted me about his eyes. An oversight is excusable in a case like this where the patient is brought unconscious to the hospital suffering from a violent injury to his head with evidences of basal fracture in both the patient and in the X-ray findings. It is more than likely that further search would have resulted had not a fracture been noted.

Nowadays, all injuries are considered medico-legally important, therefore the need of a differential diagnosis is self-evident. So in this case the moral and legal responsibility of the injured man was questioned because of financial irregularities that came to light these two years later, though I never knew anything about that while examining him. My suspicions were aroused by his general tone of conversation, and I boldly ventured an inquiry into his mental condition.

A Wassermann test was returned four plus. I found the left external rectus completely paralyzed

with very annoying diplopia. These were his only complaints.

V. L. E. 20/70, R. E. 20/20. Eyes otherwise normal. No history of venereal disease.

Dr. C. A. Fortier gave me the X-ray findings which are here appended:

"On the 7th of November, 1918, radiographic examination of the above named patient's head was made.

"Stereoscopic set lateral view. The cranium is of average thickness in the frontal region, the parietal seemed to be about 50 per cent thicker; this exaggerated thickening extends to the occipital protuberance of the occipital bone. In the frontal region the inner table shows several characteristic 'moth eaten' patches from one-half to three-fourths of an inch in diameter. The outer table in the region of the thickness shows a peculiar velvety appearance such as is frequently found in specific cases. The sellaturcica is greatly flattened and the posterior clinoid is not distinguishable, the anterior clinoid is only slightly distinguishable. The mastoid cells appear to be large and clear.

"Extending from the posterior and upper limits of the petrous portion of the temporal bone is a more or less straight dark line not in the course of either vessel grooves or sutures; this line and another about one-half an inch above it strongly suggests basal fractures, these two lines are about one inch to one and one-fourth inch in length and converge and appear to originate from a dark rarification area which was apparently the seat of injury. This area mentioned is too dark to be a normal shadow of the fossa, inasmuch as the profile section of the occipital bone shows the added thickness mentioned previously. These fractures cannot be traced into the temporal bone.

"Conclusion: The radiographic findings indicate three conditions.

"1. Basal stellate fracture about one and one-half inch posterior to the petrous portion of the temporal bone with three principal fissures.

"2. The moth-eaten patches, the bony changes (sellaturcica), the thickened cranium and velvety borders all point toward specific disease.

"3. A rarified focus at the seat of injury in the vicinity of the fracture."

We went over the findings together, very carefully inquiring as to the possibility of a fracture of this kind and locality causing a paralysis of the sixth nerve, and we thought not, in view of the findings, since this is far from the location of fractures involving this nerve. Rather do these fractures follow the base of the petrous portion of the temporal bone and extend upward towards its summit where the nerve is about to enter the cavernous sinus. There the nerve is intimate with this bony eminence, being separated from it but by a membranous fold of the dura mater. The typical bony lesions of syphilis spoken of before gave more plausible explanation of the paralysis than did the fracture. Six doses of arsphenamine were given, and while the muscle was untouched the mental condition of the case was appreciably better.

Our diagnosis, therefore, was fracture of the base of the brain complicated by a hereditary syphilitic paralysis of the sixth nerve. The entire picture was that of an old process, presumably of hereditary origin. The man was 26 years old. The reaction of degeneration was present in less than two years. All this evidence was requisitioned by the courts later, and helped to prove the man's irresponsibility. Thus it is that ophthalmologists may sometimes pick up a broken thread in the chain of medical and legal evidence. What the results of earlier treatment might have been is conjectural.

INTUBATION AND VISUALIZATION OF THE DUODENUM.

A diagnostic procedure in duodenal ulcer and periduodenal adhesions is described by I. O. Palefski, New York (*Journal A. M. A.*, Dec. 4, 1920), and a summary is given of findings in 361 established cases. In his opinion, the duodenal tube offers the best means of visualizing the course of the entire duodenum. A high acidity, blood in duodenal contents and a normal duodenal curve, with the duodenal tube in situ, are pathognomonic evidence of duodenal ulcer. A normal or subnormal acidity, absence of blood in the duodenal contents and a distorted duodenal curve are pathognomonic evidence of periduodenal adhesions, usually the result of gallbladder infection.

GASTRIC AND DUODENAL ULCER.

A critical review of 500 cases of peptic ulcer has convinced Elmer L. Eggleston, Battle Creek, Mich. (*Journal A. M. A.*, Dec. 4, 1920), that if peptic ulcer, particularly duodenal ulcer, is observed early in its history, and if the patient will submit to a carefully planned course of treatment for a reasonable time and will follow up this treatment by a carefully regulated dietary regimen over a period of some months, one can be sanguine of obtaining complete cure. In uncomplicated cases of long standing, proper medical treatment provides relief in at least 70 per cent of the cases. In the great majority of cases

in which the symptoms disappear during a course of medical treatment and there is later a return of the symptoms, the fault is due to dietetic carelessness. Surgical treatment is to be preferred for the cases complicated by pyloric stenosis not yielding readily to medical measures, cases showing repeated hemorrhage, penetrating or perforating ulcers, and for cases in which a prolonged medical course is impossible. Simple gastroenterostomy fails to provide permanent relief in a considerable number of cases, and should be supplemented by reaction of the ulcer, cauterization, infolding or partial gastrectomy.

ROENTGENOLOGIC DIAGNOSIS OF GALLBLADDER LESIONS.

Dudley Roberts, New York (*Journal A. M. A.*, Dec. 4, 1920), finds that the roentgenologic diagnosis of gallstones and the dilated gallbladder with a small percentage of failure is possible at the present time. Negative diagnosis has a value that is proportionate to the intensity of detail and sharpness of image secured in the given case. Negative diagnosis has very little value in subjects so heavy that satisfactory roentgenograms cannot be made. Subjects of slight or medium body thickness can be roentgenographed with an intensity of detail that justifies an experienced interpreter in a negative diagnosis of stones or a dilated gallbladder. The roentgenologic diagnosis of gallstones requires such an expenditure of time and money in the taking of satisfactory exposures, and so much experience in the interpretation of intensely detailed roentgenograms, however, that it is not at present a safe and practical method of diagnosis for general adoption. Ten or fifteen per cent of stones can be visualized even by an extremely poor equipment and technic; but under such conditions the importance to be attached to negative findings is negligible. An insuperable limitation of roentgenologic diagnosis of gallbladder lesions is the apparent impossibility of securing roentgenographic evidence of chronic cholecystitis without dilation or of new growth of the gallbladder and biliary ducts.

ESTIMATING SIZE AND CONTOUR OF HEART.

If the examiner is to define the border of the heart, C. F. Hoover, Cleveland (*Journal A. M. A.*, Dec. 11, 1920), says he must employ the smallest possible pleximeter area and at the same time he must be able to penetrate the overlying lung to detect the resistant heart which lies beneath. Direct or immediate percussion best serves these purposes. The stroke should be made with the palmer surface of the terminal phalanx of the extended middle finger or ring finger. The blow should be made by firmly stroking the part as if the examiner were seeking to penetrate the underlying tongue of lung. Why should percussion be made with the finger extended? If the examiner is to employ his sense of resistance to detect the underlying heart, then the muscular sense through which the resistance is perceived is best served by maintaining the long flexor muscles of the fingers in an extended position. If the fingers are flexed and percussion is done with the tips of the fingers, the muscular sense is partially sacrificed. The sense of resistance is best served by holding the fingers extended with the muscles in what may be termed a fluctuant or mobile state. As the percussing finger arrives at the border of precordial projection along the intercostal spaces from the left, the examiner will feel an increase of resistance and hear an elevation in pitch and a shortened duration of the note.

ALKALI RESERVE IN EPIDEMIC INFLUENZA AND BRONCHOPNEUMONIA.

David S. Hachen and Raphael Isaacs, Cincinnati (*Journal A. M. A.*, Dec. 11, 1920), report that out of forty-six determinations in twenty-one patients, taken during different stages of influenza and bronchopneumonia, those whose alkali reserve dropped below 46, in spite of alkali therapy by mouth, died. The alkali given consisted of sodium citrate, 2 gm., and sodium bicarbonate, 2 gm., four times a day. Death took place in these cases from within a few hours to thirty-six hours. Patients showing an alkali reserve from 46 to 52, while receiving alkali therapy by mouth, had a doubtful prognosis, a fatal termination by bronchopneumonia being forecast by a drop in the alkali reserve, while a rise accompanied improvement. When death was due to meningitis, the alkali reserve was not always a significant case, as was noted in two cases. A favorable prognosis was noted in cases having an alkali reserve of 53 or above, except in cases of complicating meningitis. Generally a drop in temperature with a drop in alkali reserve was associated with a poor condition clinically. A rise of temperature, associated with a rise in alkali reserve, often accompanied a more hopeful condition. A drop in temperature, accompanied by a rise in the alkali reserve, marked convalescence. The blood sugar remained fairly constant during wide ranges of alkali reserve and of temperature, even with approaching death.

ACUTE APPENDICITIS.

An analytic study is made by Frederick W. Bancroft, New York (*Journal A. M. A.*, Dec. 11, 1920), of the mortality and complications of 584 consecutive cases of acute appendicitis, with special reference to the late results of 500 cases in which the patients were followed from three months to four years after leaving the hospital. The main purpose is to emphasize the importance of early operation in decreasing mortality, complications and unfavorable sequels. The total mortality of the series of 584 cases was twenty-five, or 4.2 per cent. Thirteen of these deaths occurred among the cases of acute diffuse peritonitis.

APLASTIC ANEMIA AND RELATED CONDITIONS.

The treatment of this group of diseases, according to Ralph C. Larrabee, Boston (*Journal* A. M. A., Dec. 11, 1920), practically narrows itself down to transfusion—about the only thing that will do the least bit of good. Transfusion replaces red cells, and lessens for a time

the degree of anemia. It stops hemorrhages by replacing the platelets. Its effect on both of these elements will be about as durable as the elements themselves, that is, the effect on the red cells will last about a month, but the effect on the platelets will last only a few days.

DIAGNOSTIC VALUE OF CARDIAC MURMURS.

To consider a heart murmur as being synonymous with a valvular defect or stenosed orifice, Glenworth R. Butler, Brooklyn (*Journal A. M. A.*, Dec. 11, 1920), says is wrong. The presence of an aortic diastolic murmur is, in the majority of cases, reliable evidence of aortic insufficiency. But even with this murmur it is not safe to make the diagnosis without the confirmatory evidence of a water-hammer pulse, throbbing carotids, capillary pulsation, and a pistol-shot sound in the femorals. The murmur may be due to the temporary stretching of the aortic ring as a result of extreme anemia; or be of exocardial, especially cardiorespiratory, origin. A rough crescendo presystolic bruit, internal to and a little above the apex; an abrupt first sound; a much accentuated pulmonary closure sound, and a mitral stenosis, perhaps also a split second sound, means mitral stenosis. Aortic stenosis is a rather rare lesion and requires for its recognition that the murmur should be loud, rough, and accompanied by a thrill; that the aortic closure sound be weak or absent; that left hypertrophy be present, and that the pulse should be of the "plateau" variety. Pulmonary systolic murmurs only rarely, and usually as a sign of congenital malformation, are indicative of organic disease. Apical systolic murmurs most commonly are of cardiorespiratory production. Some are frictional in character, arising in the pericardium as a result of an old inflammation. Others are caused by roughening of the valve cusps. Finally, the murmur may be, and usually is, relative and due to a relaxed mitral ring. Primary organic mitral insufficiency should in no case be diagnosed unless in addition to the murmur there is evidence of cardiac hypertrophy, and, preferably, a definite history of rheumatic fever.

MALIGNANT ENDOCARDITIS IN METASTATIC ABSCESS IN GONOCOCCEMIA.

Hugh L. Dwyer, Kansas City, Kan. (*Journal A. M. A.*, Dec. 11, 1920), reports a case in a child, aged 23 months, in which culture of the gonococcus was made from the blood during life. An interesting feature in the case was the development of a superficial abscess of gonococcic origin in the lumbar region.

THERAPY OF CATARRHAL FEVERS.

To draw a sharp distinction between influenza, grip and "colds," Bernard Fantus, Chicago (*Journal A. M. A.*, Dec. 18, 1920), says is futile; hence the term "catarrhal fevers" is advocated to embrace the whole group. Even a mild case of catarrhal fever requires absolute bed treatment, continued until the patient has been well for several days. "Coddling" is the rule of safety in catarrhal fever; "hardening," in its prophylaxis. With the possible exception of alkalis, the use of medicines is merely symptomatic. Routine antipyresis is a mistake, though the sparing initial use of a few small doses of members of the antipyrin or salicylate group as analgesics may do no harm. Opiates to check cough should be used most exceptionally only in catarrhal fever. The indication is to favor expectoration, as by saline expectorants and by fluid.

MILK-BORNE DIPHTHERIA.

An analysis is made by Jonathan E. Henry, Boston (*Journal A. M. A.*, Dec. 18, 1920), of an outbreak of diphtheria in Williamstown, Mass., which was traced to infection of milk handler's finger with *B. diphtheriae*.

ABSCESS OF SPLEEN.

Elliott C. Cutler, Boston (*Journal A. M. A.*, Dec. 18, 1920), reports a case of abscess of spleen following an acute bilateral otitis media in which recovery followed drainage of the infected region. The spleen substance had given way, extensive adhesions had formed so that splenectomy was not possible. The infection extended into the left chest.

SUPPURATING MYOMA UTERI.

J. W. Nixon, San Antonio, Texas (*Journal A. M. A.*, Dec. 18, 1920), reports one case occurring among more than 1,200 operations for uterine fibroids at one hospital. This was the first instance of its kind encountered. A brief review is made of the literature.

ROENTGENOLOGY OF APPENDICAL OBLITERATION.

His study of this subject leads E. H. Skinner, Kansas City, Mo. (*Journal A. M. A.*, Dec. 11, 1920), to believe that: 1. The appendix is a functioning organ. 2. It is a lymphoid structure. 3. It receives and expels colonic contents normally during childhood and adolescence. 4. It proceeds to physiologic obliteration in adult life. 5. This obliteration is normally accomplished at about the age of 30. 6. Opaque filling of the appendix is easily secured in childhood and adolescence by meal and enema. 7. Appendical filling is a matter of sedimentation, widely patent os and antiperistalsis. The three operate in childhood and adolescence. Antiperistalsis filling is more apparent with increasing years, and is the essential element in the filling of appendices that are not obliterated after the age of 30.

INTERVENTRICULAR CARDIAC ANEURYSM WITH HEART BLOCK.

In a case of dissecting aneurysm in the interventricular septum of the heart, associated with heart block, reported by Alfred Friedlander and Raphael Isaacs, Cincinnati (*Journal A. M. A.*, Dec. 25, 1920), the diagnosis was clouded during life by an associated aortic and mitral insufficiency and a pericardial effusion. The process was continuous with and related to a syphilitic endocarditis and aortitis. The possible duration of the

aneurysm was about nine months. The symptoms present were not abnormal for the other lesions found at necropsy.

MALIGNANT ADENOPATHY OF BONES OF FOOT.

Herbert R. Brown, Rochester, N. Y. (*Journal A. M. A.*, Dec. 25, 1920), cites the case of a woman, aged 40, who at 31 had the thyroid gland removed, and was told that the gland contained a tumor. Her health was good for five years when she began to suffer from lumbago and a very tired feeling. Shoes worn at about this time were too small, and the toe was pinched. Later the toe became inflamed and then "broke down," but finally formed granulation tissue and healed. Later throbbing, dull pains were noticed in the toes of one foot, and a roentgenogram at that time disclosed a distinct loss of bone substance of the toes, four of which were removed at two operations. After about a year and a half a swelling was noted on the dorsum of the foot and on the right ankle. The tumor mass was soft and painless to palpation and also to the needle. The roentgen ray disclosed a definite loss of bone substance of the fibula and the fifth metatarsal bone, with little or no involvement of the joints. Roentgenograms of all the other bones of the body were negative. A diagnosis of a bone tumor of probable thyroid origin was made. The great toe was amputated for pathologic diagnosis, and sections showed a malignant and rapidly growing adenoma. Following the histologic studies, the leg of the patient was amputated by Dr. Prince at a point several inches above the tumor masses shown in the roentgenograms in the hope that the neoplasm might be primary at this site rather than metastatic from the thyroid gland tumor that was reported to have been removed some seven years previous. In none of the sections was it possible to find colloid deposits, so it is impossible to state that the neoplasm is derived by metastatis from the tumor of the thyroid reported to have been found.

PROPHYLAXIS OF SYPHILIS WITH ARSPHENAMIN.

Leo L. Michel and Herman H. Goodman, New York (*Journal A. M. A.*, Dec. 25, 1920), call attention to a method of preventing syphilis which they have found efficacious and which has not previously been described in the American literature. The injections of arsphenamin in small doses in persons who present no lesions, and who are definitely known to have been exposed to syphilitic infection, have in all cases resulted successfully in acting as a prophylactic measure. The prophylactic doses have averaged 0.3 gm. of arsphenamin, and the number and interval of the injections have varied with the time since first exposure. In no case has this been less than three doses. The time since exposure has little bearing on the result, but must be taken into consideration when the minutiae of the procedure are under consideration. In two reported cases, a single injection has been held to be ample.

SALIGENIN AS A LOCAL ANESTHETIC FOR THE FEMALE URETHRA.

Arthur D. Hirschfelder and H. M. N. Wynne, Minneapolis (*Journal A. M. A.*, Dec. 25, 1920), assert that saligenin is a practical, nontoxic, local anesthetic which is distinctly useful in work on the female urethra and bladder. It is about one-fifth as toxic to mammals as procain, and about one-fiftieth as toxic as cocain. In all cases, 2 c.c. of a 4 per cent solution of saligenin was injected into the urethra. A working anesthesia was obtained in every case, apparently as satisfactory as that produced by a 10 per cent solution of cocain. There is a great advantage in using this anesthetic of low toxicity, for a considerable quantity of the solution can be injected into the bladder after catheterization. This reduces the spasm so that a rapid and satisfactory examination can be made.

NATURE OF ARTHRITIS AND RHEUMATOID CONDITIONS.

One of the outstanding lessons derived by Ralph Pemberton, Philadelphia (*Journal A. M. A.*, Dec. 25, 1920), from the study of arthritis among large numbers of soldiers was to the effect that various accessory lines of treatment could be profitably combined, although often unavailing alone. External measures, such as hydrotherapy, have undoubtedly real value, but have fallen into some disrepute because of their frequent failure and because of the injurious consequences from them when pushed in the effort to obtain results. Used cautiously, however, hydrotherapy, massage and various medicinal agents, when administered in conjunction with a cautiously reduced diet, may carry benefit far beyond the point that would otherwise have been reached. It is strongly recommended that no attempt be made to treat cases by the combination of measures outlined without familiarity with the dangers and limitations that have been discussed elsewhere at length. Pemberton believes that in the domain of physiology, from the data now at command, the explanation of this disease is apparently to be found. It is believed that arthritis and rheumatoid conditions have not been heretofore critically referred to definite physiologic principles and facts. Virtually all the phenomena of the disease are explainable on this basis. Apart from this tentative explanation of the etiology and symptomatology of arthritis, various lines of study and treatment are additionally suggested.

CEREBRAL THROMBOSIS AND ABRUPT SLOWING OF CEREBRAL CIRCULATION.

To the three circulatory catastrophes, hemorrhage, embolism and thrombosis, which suddenly affect the brain, a fourth is added by Thomas G. Inman (*Journal A. M. A.*, Dec. 25, 1920), which, because of its occurrence in weakened states of the circulatory organs, may conveniently be called abrupt slowing of the cerebral circulation. The more or less mild phenomena characterized by transient attacks of dizziness, amnesia, apha-

sia, muscle paresis, paresthesias and the like, occurring in patients with generalized arteriosclerosis either with or without associated high blood pressure, seem to depend on a more or less abrupt slowing of the cerebral circulation carried to a degree at which a localized area of the brain is temporarily deprived of its customary amount of arterial blood. Attacks with a more extensive distribution, simulating the hemiplegias due to actual brain destruction but transitory in nature, may occur. Treatment directed to the lowering of blood pressure in a patient who has not been for some time under observation may be fraught with disastrous consequences, for the pressure reading obtained at the first examination, while considerably higher than what is supposed to be normal, may be too low for that individual under the conditions existing at the time the examination is made. To relieve the symptoms present at that moment a rise in pressure may be necessary. All treatment directed to the prevention of cerebral thrombosis and localized cerebral anemia must have for its ultimate object the prevention of slowing of the circulation within the brain. Dietetic treatment, such as the limitation of proteins and salt, care of the overloaded colon, limiting the amount of intensive mental work, avoidance of worry, and exercise in the open, each has its advocates, and each or, better, all combined have some value in combating the influences that further the progression of this disease. Of first importance is the avoidance of fatigue. Carefully selected food administered in frequent small feedings, rather than in larger meals, will prove of benefit. The iodids seem to be of some value when given continuously over long periods. Strychnin in full doses, the last one of the day being administered at bedtime, has appeared to be useful.

PREVENTIVE MEDICINE

Edited by
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SEASONAL PREVALENCE OF DISEASE.*

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At the inauguration of health work, in the early stages of its development, it is possible to accomplish certain ends without very close contact with people, but after that particular field has been mined out, after there has been recovered from it all of the values that are recoverable, it becomes necessary, if there are to be further successes in health work, that one should get into activities that are rather closely identified with the lives of the people themselves, run very intimately into their homes, their daily conduct, their habits; and you cannot make much headway, particularly in this latter field, unless you go with your proposals to those who are concerned by the proposal. Or, in other words, when it comes to persuading a people to change their daily habits, or to change those things that intimately concern them, you have got to have them understand what it is all about, and enter into the spirit of it. On no other basis can there be any accomplishment.

In consequence of recognizing this, it is perfectly clear to my mind that health departments must become more and more educational in the character of their activities, and health officers everywhere must get into this lien of activity. We are generally of the opinion that about everything in the way of results from applied sanitation has been accomplished. That is true in the main of communities with well developed health departments, well organized health departments, but there remains a great deal that can be accomplished and will be accomplished by the application of sanitation as distinguished in hygiene, in rural communities and in smaller cities.

Perhaps some of you are cognizant of the controversy that has been raging for two or three years as to who are the healthier, the people in the country or the people in the city. Some of you may remember that a certain department of Columbia University, presided over by Dr. Wood, conducted an investigation in New York State which showed that the death rate, and the sickness rate, of people in the rural communities was actually higher than was the death rate and sickness rate of people in the city. There came supporting evidence of the position taken by Dr. Wood. But the people from the country were not altogether satisfied with that, they questioned the returns; they wanted to see the ballots counted. A further investigation showed that the people who actually lived in the country are healthier than the people who live in the city. Then why this showing made by the investigation of Wood? Wood made his dividing line between city and country, the city of 8,000 inhabitants, saying that those people were urban who lived in places larger than 8,000 and they were rural who lived in places of 8,000 and less.

An analysis of the health conditions in these smaller cities, cities under 25,000, 15,000, 8,000, 5,000, showed that the health conditions in those

*Read before the Fifth Biennial Conference of the Health Officers of Wisconsin.

places were so much worse than the average that it served to bring up the rural death rates, or, in other words, that the apparently bad showing by the rural populations was the result of grouping in with the rural population the people living in cities of 10,000 inhabitants and less. So the great crucial place, the great problem of health today, is the community of say from 5,000 to 15,000, the people who are gathering together in the smaller cities, with the smaller opportunities for diversion and for commerce and for trade education, easy refinement that they find in such places, but who are not aware of the fact that they must pay the price for such opportunities.

They were not therefore taking the precautions and expending the money required for safety as is being done by the larger communities. Now, places of that size can gain from the further application of sanitation as distinguished from hygiene. Nevertheless, even in those communities, health departments are very rapidly getting, right now—and in the years to come will still more rapidly get—out of the field of sanitation more and more, and will get more and more into the field that concerns itself with the more intimate habits of the people. A requisite certainly for this last kind of work is education and contact with the people.

In consequence, I have devoted my time and my thought for many years as a public man, and in my private capacities, to bringing home to the people questions of health.

I am going to talk to you today about a field of health work that is not usually discussed in meetings of health officers. I am going to talk to you about the one most important of all diseases, and yet a disease that you are doing very little about, practically are doing nothing about, in your community, even that your state health department is doing practically nothing about, that no department concerns itself very much with, the reason being in all probability that we don't know just where to begin or what to do, and we were timid about doing anything until we knew what to do.

I am going to make the point that the importance of this disease demands that a beginning be made, even though we do make mistakes. Unless we begin we will mark time year in and year out. It is better to begin with the information we have, making such efforts as we can, and correcting such mistakes as we may make rather than to float on with a condition that is constantly becoming worse. I am going to talk to you about the acute respiratory diseases—pneumonia and bronchitis and influenza—because from the statistical standpoint they cannot be separated. Any statistical return that attempts to separate the acute respiratory affections into bronchitis and pneumonia, having one table for each, or bronchitis, pneumonia and influenza, is liable to make mistakes, is liable to arrive at wrong conclusions as the result of such statistical tables.

Your attention is invited to the subject of the seasonal distribution of certain diseases. A close study of this phase of certain diseases has been of great assistance in controlling certain diseases and doubtless will aid in the case of others. Consideration of it will keep you in your work. It was the observation of a supposed sunburn in the month of February which led a physician acquainted with the seasonal variation of pellagra to make one of the earlier diagnoses of the disease in this country.

Pellagra is a remitting and in fact an intermitting disease. Its symptoms, and especially its skin symptoms, are most in evidence in hot weather. In what I have to say I will have in mind the seasons as they are in the continental United States. While pellagra is not much of a health problem in this state, there are some cases, and I recall the circumstances connected with the recognition of the first so diagnosed case of pellagra in Chicago. The attending physician had grown suspicious as to some cases in a public institution. He came to me as health commissioner and I secured the services of an expert in pellagra. When the diagnosis was made the attending physician said, "If these cases are pellagra then I have seen a fair number of cases in the six years I have been here."

Malaria. Wisconsin health officers do not consider malaria to be one of their problems, yet a resort state frequented by people from malarial states, many of whom are malaria carriers, cannot wholly disregard malaria. Discovery that mosquitoes do not convey malaria until about June and that the sexual cycle of the plasmodium in mosquitoes ceases to complete itself about October 1 has been of great service in controlling malaria —Bass-Mitzmain (Public Health Reports, July 6, 1917). The period of infectivity of the infected mosquitoes is limited to less than four months. During the remaining eight months the disease is

alone in the human reservoir host. If that reservoir could be completely cleared out in that eight months period the disease would be brought under control.

Thebault (Journal, Arkansas State Medical Society, April, 1920) observed that there was a maximum outbreak of malaria among adult negroes about three weeks after the beginning of the camp meeting season in summer. It was noticed that the prevalence of malaria among negro children (due to infection in the homes with malaria brought home by adults) depended on the wetness of the season. In icy seasons, when the breeding places for mosquitoes located near the homes were dried up, there was but little malaria. These observations have been of service in controlling malaria in the rural districts, and especially in valuating the importance of rural churches and homes in the spread of malaria. The seasonal distribution of yellow fever was of help in establishing the relation of mosquitoes to that disease.

The British studies of the relation of the wet and dry season and the relative atmospheric humidity to the prevalence of fleas has been of service in controlling plague (W. G. Leston, Journal, Hygiene, 1906-1907, Vols. VI and VII. Vergbetzki D. T. Journal Hygiene, Vol. VIII; Bacot Journal Hygiene, Vol. XIV). Kellog's (Bulletin California State Board of Health, 1919) observation that the outbreak of pneumonic plague at Oakland in 1919 was easily controlled but that should the same disease get a foothold in winter in the northern part of the United States east of the Rocky Mountains, it would cause disaster—this conclusion was based on considerations of season and climate—atmospheric temperature and humidity.

Typhoid fever is a seasonal disease in varying degrees in different parts of the country. In those sections of the country where the water and milk are not under good control and where flies abound the disease has a high summer-autumnal peak. We recall the observations of Pettenkofer, made in the earlier days of sanitary science, that when the ground water was low the typhoid rate was high, probably because in such seasons of low ground water there was considerable seepage into wells.

In Massachusetts a recent report of the State Board of Health (Am. Journal Public Health, 1920) indicates that more than one-half of their typhoid is due to the rather direct contact with carriers. In this state the seasonal variation of typhoid is not great.

In Chicago, where typhoid has been reduced to the minimum, there are few cases except those imported, and those due to carriers; there is but little seasonal variation.

Infant Mortality. The monthly curve of infant mortality still shows a July-August peak. In spite of the fact that in the curves for mortality from all causes the July-August peak has almost disappeared and in 1920 did disappear entirely, probably temporarily, the July-August peak for infant mortality still persists. I suggest that you study the double peak curve of infant mortality in census tables (Am. Journal Public Health, October, 1920). Levy of Richmond (Report Richmond Department of Health) from a close study of this peak concluded that flies and fleas were dominating factors. The general adoption of the policy of immediately placing all soiled diapers in covered containers and the additional policy of fly prevention very greatly reduced the infant mortality rate and especially the July-August peak.

A closer study of the effects of temperatures over 90 maintained for several days, of humidity and of prevailing winds and an adjustment of clothing and diet in accordance with these climatic factors will further reduce this peak.

Cerebro spinal meningitis is a disease of the late winter and early spring. While there are occasional cases at all seasons of the year, environmental conditions peculiar to the spring are necessary to convert a constant endemic into an epidemic. Studies made by British army surgeons in Egypt show that the percentage of meningococcus carriers in that country due to low atmospheric humidity is about one, whereas in England the carrier rate is rarely less than three and occasionally rises to 20 per cent. Whenever the carrier rate rises over five, meningitis is liable to become epidemic among all groups when the individuals are brought in close contact.

Infantile paralysis is a disease of hot weather. Here again an endemic constant, and probably a carrier constant, finds in a certain season (June to September) environmental influences which provoke localized epidemics.

Smallpox is a cold weather disease. Reduced to a minimum in hot weather, it begins its annual

increase about November and mounts for several months. A peculiarity of the smallpox curve is its way of holding on until June. That high atmospheric temperature is not the factor which succeeds in arresting the disease is shown by this tendency to hold on until well into the summer.

Years ago I was interested in smallpox conditions at Niagara because the anti-vaccinationists repeatedly cited that city as proof that vaccination was not necessary for the control of smallpox. The influential character of certain anti-vaccinationists in that city had resulted in more than the usual proportion of unvaccinated children in the public schools. Reading their reports I noticed that smallpox persisted through two summers on the basis of this observation, and having reason to think the proportion of unvaccinated people there to be high and the authorities there not disposed to or not able to control the situation, I predicted an outbreak of smallpox there in the winter of 1916. What happened was this: By January the disease was so widespread that the State Health Department had to take charge of the situation and vaccinate the entire community. This speedily ended the epidemic.

J. Netrican (Indian Medical Gazette, March, 1920) has demonstrated a close relationship between season and vaccine. Under the ordinary conditions which prevail in rural districts and in physicians' offices generally vaccine rarely remains potent more than one month in hot weather.

Diphtheria, as a rule, reaches its peak about October, soon after the opening of schools. As a rule measles, scarlet fever and whooping cough are at their minimum in warm weather. Their increase begins in the autumn and reaches the peak stage in the spring.

Venereal Disease. P. M. Ashburn (Journal American Medical Association, December 13, 1919) says, speaking of venereal disease in the A. E. F., season has an influence and both contact and incidence rates rose markedly in the late spring and early summer. "In the spring a young man's fancy lightly turns to thoughts of love." Studies of the birth rate do not show much seasonal variation in human births. If there is such variation in venereal disease the two facts indicate that the practice of prevention is more nearly universal in the former than in the latter.

In my opinion the great preventive medicine problem of the present, and so far as we can see for the next ten years, is the control of the acute infections of the respiratory tract. These diseases vary according to the season and their increase has resulted in a very marked shift in the seasonal distribution of deaths. The fall in the death rate of our larger cities has come to a stop because of the fact that pneumonia, bronchitis, influenza, tonsilitis and coryzas are increasing. The average death rates of Chicago by decades is as follows:

1850-59	33.56
1860-69	23.35
1870-79	21.17
1880-89	20.649
1890-99	18.47
1900-09	14.6
1910-19	14.75
Without 1918	14.48

There have been two sharp drops. That of 1850-69, amounting to ten, was due to the application of the Pettenkofer theories. That of 1890-1909, amounting to 4, was due to the application of the Koch theory. Since 1900 there has been no decline in our death rate. Repeating the statement, the factor bringing this about has been the increase in the winter-spring diseases, and especially the acute respiratory infections.

In the latter part of the last century our heaviest sickness and death rates were those of the summer. Typhoid was a considerable factor. Typhoid has been virtually wiped out, at least in Chicago. The typhoid death rate is now about one, instead of about 150, as was the case in the early 90's. There has been an almost complete eradication of adult diarrheas. In fact, with us the application of Pettenkofer principles has brought us about all they possibly can, except in the infant mortality rates, and these are falling rapidly. In 1920 the July-August peak in Chicago has entirely disappeared. The number of deaths in July, August and September, 1920, is only 6,378 with a population of 2,700,000, as against 7,709 in 1911 with a population of 2,245,000, and 6,502 in 1901 with a population of 1,738,000.

But this does not explain the shift in seasonal distribution of disease. The acute respiratory diseases are increasing as other diseases decrease. The combined death rate per 10,000 for pneumonia, bronchitis and influenza was in

1877	12.32
1887	23.12
1897	21.41
1907	28.21
1917	21.63

The pneumonia-bronchitis-influenza rate is at its minimum in the summer and autumn. The first marked rise appears in December. It reaches its maximum about March, though this is sometimes delayed until April. It seems probable that the severe infections of the respiratory tract—those which frequently result in death—are related to the milder infections such as coryzas, tonsilitis, pharyngitis and bronchitis.

There are carriers of pneumonia, bronchitis, influenza organisms who act as reservoir hosts. A close relationship to the epidemiology and endemiology of cerebro spinal meningitis seems logical. In the control of this disease we must take cognizance of

(a) Carriers.
(b) Atmospheric humidity and temperature.
(c) Season.
(d) Crowding.
(e) Ventilation.

In an exceedingly well worth while report Leonard Hill (Special Report Series No. 32, Medical Research Committee, National Health Insurance) says epidemics of colds are most common when the humidity is great and the temperature is variable. It is the indoor conditions of cold floor and warm, stagnant air about the head which produces the congestion and swelling of the nasal membranes and determines the coryzas so much complained of by members of the House of Commons. Mucin is the first line of defense against infections with coryza—a healthy nasal mucus membrane is the best protection against coryzas, meningitis and poliomyelitis.

The question comes up, is it better to undertake the control of pneumonia by limiting our efforts to the reporting and regulating of developed pneumonia? The answer is, we have not made much headway in controlling meningitis along that line; would it not be well to do what seems best for cases of developed pneumonia in the way of making them safe for others. Such efforts might embrace prohibition of kissing and promiscuous spitting, destruction of sputum, and control of the convalescent during the period of convalescent carrierism. It might include vaccination as is now being done in the United States Army (see Journal American Medical Association, September 25, 1920). They should also run to crowding control of rooms occupied by many people, indoor humidity, ventilation. To get far, in my opinion, they must include studies of the carrier situation and such efforts for the control of carriers as are practicable.

My purpose is to call your attention to the fact that we are losing ground with relation to this group of diseases in the very years in which we have demonstrated our ability to bring under control all other forms of bacterial form of disease. What are we going to do about it? There is one thing to do about it and that is for health departments, state, national and local, to concentrate upon what is at the present day the most important health problem, that is, the acute respiratory infections. There is work to do for every group of health workers; there is work to do for the laboratory men. I know of no more unsatisfactory division of public health information than that which relates to the bacteriology of acute infections of the respiratory tract. The laboratory men have a great deal to learn and to unlearn. There is opportunity for a large amount of research work on their part. There is work to do by the city health officer, the rural health officer, the state health officer. There are administrative problems that have to be worked out. We hesitate to tackle any situation in which a large percentage of the people are carriers of bacteria, that are responsible for that situation; or, applying it to coryzas and to tonsilitis, it is a very difficult question to say just what can be done in the way of control of common colds, and what should be done in the way of health department activities in relation to tonsilitis and pharyngitis and bronchitis and ordinary coryzas; yet, in all probability, this group represents the reservoirs out of which the serious diseases, pneumonia and bronchitis, develop. How should we undertake the management of these diseases? Shall we strike at them in the springtime, when the serious diseases are rampant, when the pneumonia death rate is high, when people are more or less agitated or concerned, and attempt to control by controlling the serious outbreak? Or shall we do as we do with certain other diseases, wait until the time of recession has come and undertake to control the disease in the period of its minimum resistance?

As you know very well, if we have public sentiment back of us, we can do a good deal more than controlling smallpox in hot weather when there are but few cases and the danger of the spread of contagious is but slight, than we can in the winter

season. We can do more toward the control of malaria in the winter time, the reservoir season, the latent season for malaria, if you please, than we can in the summer time when the disease is being actively spread and re-infected by mosquitoes. Here is a problem for the best administrative thought of the administrative officers of your state health department. Shall we launch our campaign for the control of pneumonia during the summer time and carry it on in that period of recession, its period of weakness? Or, on the other hand, shall we gain support for our campaign against pneumonia by fighting it in the spring time when people are more or less agitated? Then there is work for the public health educator, if you please. I know of no subject on which people are so indifferent, are so uninformed as on the subject of colds and ordinary bronchitis and ordinary sore throat. There is a great deal of need for education and enlightenment on this score.

When we went into the war those who were planning the campaign planned to protect the health of the soldiers, and they guaranteed that the men going into the army would not be subjected to the diarrheal diseases and to typhoid fever, as had been the case in previous wars. They said to the mothers of the land that if you will give us your boys we will guarantee that they will not be subjected to the dangers of diarrhea, dysentery and typhoid fever. They made no guarantees, made no promises whatsoever with respect to pneumonia and the respiratory diseases, as the result of pneumonia, bronchitis and influenza, which will be comparable to those things connected with the war of 1898 of which we are not proud, scandals comparable with the typhoid and diarrhea scandals of the Cuban War, and that prediction was made in the spring or summer of 1917. At the same time nobody had the foresight to see the great wave of influenza which was destined in 1918 to sweep around the world. Now, why were no promises made? No promises were made because the administrative officers of the health department of the United States Army and Navy did not know what to do to protect the soldiers against respiratory infection; and in fact they are on a par with the administrative officers of state and local health departments at the present time. That is one reason why they made no guarantee. The second reason was, the laboratory research work had not been done. There had not been the foundation work of research in the laboratory necessary for the making of such promises, and in the third place there was no sub-stratum of community intelligence and conscience on these questions. We have a public health conscience relative to water. We have a public health conscience relative to milk. We have a public health conscience relative to smallpox. If smallpox is permitted to continue in your community, your community holds your health officer responsible for its continuance there. If there is an outbreak of typhoid fever due to polluted water, the community at once visits punishment upon somebody for that. There is a community intelligence, a community conscience on these questions. But the public is not interested, there isn't community intelligence and there isn't community conscience with relation to polluted air and bad ventilation, and with relation to common colds; and therefore there is work for the group of health educators to do quite as much as there is for the laboratory man and the public health administrator.

PRINCIPAL CAUSES OF DEATH.

Census Bureau's Summary of Bulletin on Mortality Statistics, 1919.

Washington, D. C., November 15, 1920.—The Census Bureau's annual bulletin on mortality statistics for the death registration area in continental United States, which will be issued shortly, shows 1,096,436 deaths as having occurred in 1919. This represents a rate of 12.9 per 1,000 population, and is the lowest rate recorded in any year since the establishment of the registration area. The rate for 1919 is in striking contrast with the unusually high rate for 1918 due to the pandemic of influenza, which was 18 per 1,000. This is a drop of 5.1 per 1,000 population.

The death registration area in 1919 comprised 33 states, the District of Columbia and 18 registration cities in nonregistration states, with a total estimated population of 85,147,812, or 81.1 per cent of the estimated population of the United States. The states of Delaware, Florida and Mississippi were added to the area in 1919 and Nebraska in 1920, so that now the only states not in the area are Alabama, Arizona, Arkansas, Georgia, Idaho, Iowa, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, West Virginia and Wyoming. The Territory of Hawaii is part of the registration area, but the figures given in this summary relate only to the area in continental United States.

The following table shows, for the death registration area in continental United States in 1919, the total number of deaths and the death rate by certain leading causes, together with the percentage which each cause contributed to the total:

Cause of death.	Number of deaths.	Rate per 100,000 population.	Per cent of total.
All causes[1]	1,096,436	1,287.7	100.0
Organic diseases of the heart	111,579	131.0	10.2
Tuberculosis (all forms)	106,985	125.6	9.8
Tuberculosis of the lungs[2]	94,772	111.3	8.6
Tuberculosis meningitis	5,175	6.1	0.5
Other forms of tuberculosis	7,038	8.3	0.6
Pneumonia (all forms)	105,213	123.6	9.6
Influenza	84,113	98.8	7.7
Acute nephritis and Bright's disease	75,005	88.1	6.8
Cancer and other malignant tumors	68,551	80.5	6.3
External causes (suicide excepted)	67,654	79.5	6.2
Cerebral hemorrhage and softening	66,918	78.6	6.1
Congenital debility and malformations	56,714	66.6	5.2
Diarrhea and enteritis (under 2 years)	37,635	44.2	3.4
Diabetes	12,683	14.9	1.2
Diphtheria and croup	12,551	14.7	1.1
Bronchitis	10,913	12.8	1.0
Appendicitis and typhlitis	10,029	11.8	0.9
Suicide	9,732	11.4	0.9
Puerperal affections, other than puerperal septicemia	9,538	11.2	0.9
Respiratory diseases, other than pneumonia and bronchitis	8,865	10.4	0.8
Hernia and intestinal obstruction	8,853	10.4	0.8
Typhoid fever	7,860	9.2	0.7
Cirrhosis of the liver	6,704	7.9	0.6
Meningitis	5,508	6.5	0.5
Puerperal septicemia	4,950	5.8	0.5
Whooping cough	4,714	5.5	0.4
Rheumatism	3,907	4.6	0.4
Measles	3,296	3.9	0.3
Malaria	3,275	3.8	0.3
Scarlet fever	2,383	2.8	0.2
Erysipelas	2,186	2.6	0.2
Smallpox	358	0.4	[3]
All other defined causes	172,161	202.2	15.7
Unknown and ill-defined causes	15,603	18.3	1.4

1. Exclusive of stillbirths.
2. Includes acute miliary tuberculosis.
3. Less than one-tenth of one per cent.

BOOK REVIEWS

Hygiene of Communicable Diseases. By Francis M. Munson, M. D. Illustrated. Paul B. Hoeber, New York. 1920. Price, $5.50.

Dr. Munson presents in this work of 800 pages, in a concise and readily acceptable form, the information now available concerning epidemiology and the management of the communicable diseases. His years of experience in the U. S. Navy and as a teacher of hygiene at Georgetown University, give an exceptional experience on which to draw in writing this work. The arrangement of the book is such that the physician can readily turn to any subject for reference.

Such special subjects as railway sanitation, municipal sanitation, rural, school, prison and industrial sanitation are admirably taken up in special chapters devoted to them. The book is divided into two general divisions —the first part dealing with epidemiology, prophylaxis and sanitation, and part two with the communicable diseases. Dr. Munson's work is well worth while and should certainly be in the hands of every health officer.

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SOCIETY PROCEEDINGS

BARRON-POLK-WASHBURN-SAWYER-BURNETT COUNTY

The regular meeting of the Barron P. W. S. B. County Medical Society was held at Spooner, December 7th. The retiring president, Dr. I. G. Babcock, gave a short address to the society on the "Policy for the Coming Year." Dr. D. L. Dawson presented a review of "Persistent Occiput Posterior Positions."

The following officers were elected for 1921: President, Dr. J. H. Wallis, Rice Lake; vice-president, Dr. A. D. Galloway, Clayton; secretary, Dr. D. L. Dawson, Rice Lake; delegate, Dr. Gentz Perry, Amery; censor, Dr. G. A. Larson, Hayward. A program committee was elected for the coming year, and a number of the physicians subscribed ten dollars each to a fund to provide outside men for the programs.

D. L. Dawson, M. D., *Secretary.*

DANE COUNTY.

At the December meeting of the Dane County Medical Society, the following officers were elected: President, Dr. H. P. Greeley; vice-president, Dr. G. R. Duer; secretary-treasurer, Dr. H. M. Carter; censor, Dr. W. F. Lorenz; delegates, Drs. W. F. Lorenz and T. W. Tormey.

H. P. Greeley, M. D., *Secretary.*

FOND DU LAC COUNTY

The regular annual meeting of the Fond du Lac County Medical Society was held on December 8, 1920, at the Palmer House, Fond du Lac, at 6:30 P. M. Dinner was served to twenty-seven members. The election of officers resulted as follows: President, Dr. F. M. McGauley; vice-president, Dr. D. V. Meiklejohn; secretary-treasurer, Dr. D. N. Walters.

D. N. Walters, M. D., *Secretary.*

JUNEAU COUNTY

The annual meeting of the Juneau County Medical Society was held at Camp Douglas, December 7. The following officers were elected for 1921: President, Dr. E. H. Townsend; vice-president, Dr. C. A. Vogel; secretary, Dr. A. T. Gregory; delegate, Dr. C. O. Cron; board of censors, Drs. C. A. Vogel, F. F. Field, and T. S. Lawler.

KENOSHA COUNTY

At the annual meeting of the Kenosha County Medical Society, held December 8, at the Elks' Club, Kenosha, the following officers were elected: Dr. C. A. Palm, president; Dr. J. O. McCracken, vice-president; Dr. H. M. Ripley, secretary-treasurer. Following the election of officers, Mr. C. C. Brown, president of the First National Bank, gave a very interesting talk to the physicians on the question of investments.

LANGLADE COUNTY

The Langlade County Medical Society held its annual meeting at the Hotel Butterfield, Antigo, December 16. A five course banquet was served at 6:30 P. M., after which the business meeting and smoker was held. All of the officers were re-elected. A very enjoyable time was experienced and interesting clinical cases discussed.

J. C. Wright, M. D., *Secretary.*

MANITOWOC COUNTY

At the annual meeting of the Manitowoc County Medical Society held December 15, the following officers were elected: President, Dr. A. M. Farrell; vice-president, Dr. Eugene Gates; secretary, Dr. V. Kellner; delegate, Dr. E. G. Festerling.

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Thursday, December 9. Dinner was served at 6:30, after which officers were elected for 1921 and the reports of the standing committees read. The subject discussed was "The Scope and Limitations of City and County Clinical Dispensary Service," led by Dr. Charles H. Stoddard.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

The last meeting of the year of the Milwaukee Medical Society was held in the Society rooms, December 14, at eight P. M. The following clinical cases were presented: "Splenectomy in a Case of Hemolytic Jaundice," by Drs. E. Mensing and M. Rogers; "Hemoglobinuria after Second Transfusion with Same Donor," by Dr. Wm. Thalhimer. Papers were read as follows: "Cystitis," by Dr. J. C. Sargent, and "Diagnosis of Renal and Ureteral Lesions—illustrated by lantern slides," by Dr. W. K. Gray. A meeting of the Council was held after the program.

Oscar Lotz, M. D., *Secretary.*

MILWAUKEE OTO-OPHTHALMIC SOCIETY

The regular meeting of the Milwaukee Oto-Ophthalmic Society was held in the rooms of the Milwaukee Medical Society in the Colby-Abbot Building, December 14. The program consisted of a clinical hour, and talks by Drs. Clarence Loeb, Chicago, and Frank J. Novak.

TWIN CITY MEDICAL AND DENTAL SOCIETY

The Twin City Society held its regular meeting at the Hotel Menasha, Neenah, December 8. The business session followed the seven o'clock banquet, at which the following officers were elected: President, Dr. J. M. Donovan; vice-president, Dr. I. E. Ozanne; secretary, Dr. R. B. Rogers, and treasurer, Dr. G. E. Forkin. The society gave a rising vote of thanks to Dr. D. J. Ryan, retiring president, for his successful work during the past year in bringing the Twin City Society up to its present standard.

WAUKESHA COUNTY

The Waukesha County Medical Society at its regular meeting, December 16, elected the following officers for 1921: President, Dr. G. H. Perrin; vice-president, Dr. A. W. Rogers; secretary, Dr. S. B. Ackley; delegate, Dr. F. W. Aplin; alternate, Dr. H. A. Peters, and censor, Dr. G. E. Peterson.

ASSOCIATION NEWS

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION FORMULATES ITS SOCIAL PROGRAM.

The House of Delegates of the American Medical Association, at its recent meeting in New Orleans, directed the Council on Health and Public Instruction to make a report at the next annual meeting on the relation of the medical profession toward the public. At its meeting, November 11, the Council considered this matter and in doing so asked to sit with it Dr. Frank Billings of Chicago, Dr. Hugh Cabot of Ann Arbor, Dr. Wadsworth of the New York State Department of Health and Dr. F. E. Sampson of Creston, Iowa.

The Council considered the following subjects and took action as stated below:

1. The Council believes it highly desirable that the nature and transmission of communicable diseases should be taught in the public schools of the country. This is already a legal requirement in a few states. In other states such instruction is confined to tuberculosis. The secretary of the Council was requested to gather such information as he may be able to find bearing on this matter and to have framed a model bill for introduction into the legislatures of the states which do not already provide for such instruction.

2. The Council believes that teachers in our public schools should know something about the communicable diseases and what should be done with pupils under their charge developing these diseases. The Council believes that a course in epidemiology should be required in all normal schools and in schools of education in our universities; in short, that no one should be licensed to teach without having had instruction in epidemiology. The secretary of the Council was requested to have formulated a model bill bearing upon this subject.

3. The Council is of the opinion that there should be a closer co-operation between the medical profession and laymen who are interested in public health, and the Council recommends that sections on public health and sanitation be organized in state and local medical societies, and that laymen interested in public health be admitted as associate members of this society and referred to the sections. In the opinion of the Council, this matter should be discussed more fully at the next meeting of the Council in March, 1921.

4. In the opinion of the Council, it is highly desirable that the American Medical Association should, as soon as possible, begin the publication of a popular, up-to-date journal on sanitation and epidemiology, which should give to the public the latest, most complete and most scientific information concerning the prevalent and communicable diseases. It is the wish of the Council that this matter be referred to the Board of Trustees of the American Medical Association.

5. The Council on Health and Public Instruction believes that the American Medical Association should take steps to secure the following results:

(a) To assist local medical practitioners by supplying them with proper diagnostic facilities.

(b) To provide for residents of rural districts, and for all others who cannot otherwise secure such benefits, adequate and scientific medical treatment, hospital and dispensary facilities and nursing care.

(c) To provide more efficiently for the maintenance of health in rural and isolated districts.

(d) To provide for young physicians who desire to go to rural localities, opportunities for laboratory aid in diagnosis.

(e) The Council believes that these results can be best secured by providing in each rural community a hospital with roentgen-ray and laboratory facilities to be used by the legally qualified physicians of the community. The secretary of the Council was requested to study the laws of the different states bearing upon this subject and to prepare a model bill to be studied more fully at the meeting of the Council in March, 1921.

VICTOR C. VAUGHAN, M. D., Ann Arbor, Mich.
Chairman, Council on Health and Public Instruction.
—*Jour. A. M. A.*, Dec. 4, 1920.

ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

On December 15th, a meeting of Physicians and Surgeons was held at the Wisconsin Hotel for the purpose of organizing a State Association of Industrial Physicians and Surgeons. About twenty-five attended the meeting and a constitution was adopted.

The Association was formed for a definite purpose. The industrial world has grown to the extent that Industrial Surgery, Medicine and Hygiene has become a definite and distinct specialty in itself and requires a close study of its many phases. With this purpose in view an organization was perfected and the following officers were elected:

President, Dr. C. F. Schram, Beloit.

Vice-President, Dr. R. A. Waite, Milwaukee.

Secretary and Treasurer, Dr. R. E. Fitzgerald, Milwaukee.

Directors for 1 year, Dr. F. Bauer, Milwaukee; Dr. A. A. Maurer, La Crosse.

Directors for 2 years, Dr. W. Johnson, Janesville; Dr. S. H. Wetzler, Milwaukee.

Directors for 3 years, Dr. E. W. Maechtle, Milwaukee; Dr. C. A. Palm, Kenosha.

During the year from four to six meetings will be held for the purpose of clinical demonstrations. The annual meetings will be held at the same time and place with the State Medical Society.

CORRESPONDENCE

AS A COUNTRY DOCTOR SEES THE NURSE SITUATION.

Salem, Wis., Dec. 15, 1920.

At the present time the country people are practically without nursing service. Why is it so? First, Nurses seem to be scarce; Second, They will not take cases in

the country; Third, Only a few of the country people can pay the present prices and do so only in extreme cases. The rich old farmers form so small a part of the country population that few are able to pay the present prices; resulting in many being badly in need and cannot get help; they are also unable to go to a hospital for the same reason.

I believe the common people must be cared for and believe they are badly in need of nurses trained for a short period, perhaps one year.

This training need only fit the nurse to follow the doctor's directions and do it well. It seems the past training has included much of diagnosis and treatment not needed.

I believe the people do need and will have more nurses and I am of the opinion that it is better that the nursing profession do this as it may not be done in a way to conserve their interests as well if it is left to others to do.

The field for nurses is so large that the nurses need not fear that the under or less trained nurse will in any way take the place of the trained nurse fitted for special work.

Sincerely,
WM. FLETCHER, M. D.

To the Editor:

The New York Committee on After-Cure of Infantile Paralysis Cases published and distributed the report of "The Survey of Cripples in New York City."

Our aim has been to send this report to those in a position of responsibility in agencies for cripples and to all those who might have a general interest in cripples, and in plans for their aid. The undersigned would be glad to know of anyone who has been overlooked and would appreciate suggestions for further possible distribution of the report.

ROBERT STUART, *Director*,
N. Y. Committee on After-Cure of Infantile Paralysis Cases,
69 Schermerhorn Street,
Brooklyn, N. Y.

NEWS ITEMS AND PERSONALS

The new city isolation hospital at Superior was opened December first and the patients were moved from the old hospital to the new. The cost of same aggregates about $15,000.

Many changes are being made at Resthaven, the U. S. Public Health Service Hospital located at Waukesha. The first, second and third floors are being remodeled into wards, thus doing away with considerable waste space. A reading room will be provided and the baths will be made larger. The number of patients has increased to 180 and preparations are being made to accommodate 300.

Miss Harriet Noyes of Manitowoc is the first graduate of the army school of nursing to be appointed in the army nurse corps. She will enter the corps with the relative rank of second lieutenant.

Dr. R. T. Teschan, member of the directorate of the Emergency Hospital, Milwaukee, who has been critically ill at his home, is reported much improved.

The Racine health board has abandoned the proposition of establishing a temporary isolation hospital to harbor contagious disease cases until the new building in the northwest part of the city is completed. Instead, a stricter quarantine in the homes will be maintained by engaging one or more additional inspectors.

Dr. Charles H. Stoddard, Milwaukee, has been elected president for 1921 of the Psi Epsilon Alumni Club.

The bill for "the public protection of maternity and infancy," which provides for co-operation between federal and state governments, was passed by the Senate in a much amended form. The bill carries an annual authorization of $1,480,000 for the next and subsequent years. Of this, $480,000 is to be apportioned equally to the states and the remaining $1,000,000 will be apportioned to them in the proportion which the population of each state bears to the population of the United States. As introduced, the national appropriations were graduated, increasing annually until a maximum of $4,000,000 would have been reached in 1926. In order to obtain its share of the money appropriation a state may create or designate an agency which shall have power to co-operate with the national children's bureau in the administration of the act. The children's bureau has the authority to recommend the appointment of advisory committees, state and local. It is stipulated that in order to provide "popular, nontechnical instruction to the residents of the various states, particularly to those to whom such facilities are not accessible, on the subject of the hygiene of infancy, hygiene of maternity and related subjects, the state board is authorized to arrange with the state university, land grant college, or other public educational institution for the provision of extension courses by qualified lecturers." Not more than 25 per cent of the amount granted to a state may be used for this purpose. No payment out of the appropriation of $1,000,000 shall be made to any state until the legislature of that state has appropriated an equal amount from the state treasury.

Plans are being made for the erection of a monument in commemoration of the work of the late Dr. H. W. Abraham, Appleton, president-elect of the Wisconsin State Medical Society who died recently. An offer of $7,500 was made by G. E. Buchanan, a life long friend of Dr. Abraham, providing on equivalent sum was raised by popular subscription.

The following seven new directors to the board of the Milwaukee Maternity and General Hospital were elected recently: Mmes. Edward Inbusch, Hugo W. Schnetzky, F. Heinemann, E. Philipp, Miss Ella Zabel, Miss Mary Campbell, Max R. Schade.

The state legislature, at its next session, will be asked to appropriate $25,000 or more, to continue the work of the state board of health's fight on social diseases. The state will receive only $13,863 from the government for this work this year.

DEATHS

Dr. C. M. Gould, former head of the city health department of Superior, died at his home at Tucson, Arizona, December 7, 1920.

Dr. Wm. T. O'Brien, who has been a prominent physician and surgeon at Ashland for thirty years, died at St. Joseph's Hospital, December 20, after an illness of several weeks. Dr. O'Brien was born in Independence, Iowa, in 1861, and graduated from the Chicago College of P. & S. in 1890. He was a member of the Ashland-Bayfield-Iron County, Wisconsin State, and American Medical Associations.

BOOK REVIEWS

The History of the American Red Cross in Italy. By Charles M. Bakewell, M. D. The MacMillan Co., New York. 1920.

This is a delightful story of the Red Cross work as carried on in Italy, not by any means a detailed statistical account, but rather a readable tale to tell the American people what their dollars did in Italy.

The work is well illustrated with many original halftones and is well worth anyone's time.

Old at Forty or Young at Sixty. By Robt. S. Carroll, M. D. The MacMillan Co., New York. 1920.

Those who have read Dr. Carroll's "Mastery of Nervousness," "The Soul in Suffering," and "Our Nervous Friends," will appreciate his latest effort in writing a semi-medical work for the lay reader. As written under his title, it is a work "simplifying the science of growing old."

There are certain semi-medical works written for lay readers which should be available in the office of every physician for the purpose of loaning to patients. Dr. Carroll's work is one of these, and will be equally valuable for this purpose to his work on "The Mastery of Nervousness."

Diabetes. By Philip Horowitz, M. D. 27 illustrations, 2 color plates. Paul B. Hoeber, New York. 1920. Price, $2.00.

This little book is written by Dr. Horowitz as a guide in the management of diabetes which can be safely placed in the hands of the patient. He states in his preface that it is not intended in any way to supplant the doctor but to aid in bringing about a more intelligent co-operation between doctor and patient. The nature of the disease is carefully considered, yet written in such a manner as to allow of a good understanding by the lay reader. Hygiene and exercise are fully covered; menus, recipes, and tables are given in full and tests explained.

Sex and Life. By W. F. Robie, M. D. Sold only to members of the recognized profession. Richard G. Badger: The Gorham Press, Boston. 1920.

Only those who have read Dr. Robie's "Rational Sex Ethics" will appreciate, without reading, the value of this work and the sane plane on which it is written. It is, as stated by the author, what the experienced should teach and what the inexperienced should learn. No one, it seems to us, writes so clearly and so sanely on sex topics as does Dr. Robie. These perplexing problems are explained to the lay reader in a common sense way and there are no fantastic theories. A work of this character is a real delight after reading so much of the trash which has been written on the subject and placed in the hands of the laity. The Journal endorses this work and recommends it for the library of every physician.

Sleep Walking and Moon Walking. A Medico-Literary Study by Dr. J. Sadger, Vienna. Nervous and Mental Disease Publishing Co., Washington, D. C. 1920.

This is monograph 31 of the series of special works published by the Nervous and Mental Disease Publishing Company. The work will be interesting reading to any physician, but will appeal especially, of course, to those working in psychiatry and psychology. It furnishes a key to the problem of sleep walking by psycho-analysis which has unlocked the mysteries of so many psychic phenomena. Dr. Sadger has offered a skilful explanation of noctambulism and the work is a classic on the subject.

Physiology and Biochemistry in Modern Medicine. By J. J. R. Macleod, M. B. Third Edition. C. V. Mosby Company, St. Louis. 1920.

The second edition of this book is a splendid text on advanced physiology and is at the same time an excellent correlation of modern physiological knowledge with clinical medicine. The practitioner of today must not only be familiar with normal physiology, with all of its recent advances, but he must scrutinize all of his cases from the physiological point of view. Many conditions such as those of abnormal metabolism and abnormal function of the endocrine glands are essentially cases of abnormal physiological function, rather than organic pathological conditions. Where the case is essentially one of organic pathological lesions, there almost invariably follows abnormal physiological changes. These physiological changes must be recognized and treated with exactly the same degree of accuracy and precision as the primary lesion causing the disease.

This book of Macleod is an excellent text for instruction and for reference, and should be of value to every physician who wishes to keep abreast of the times in the practice of medicine.

The Chapters on Carbohydrate Metabolism and Diabetes, and on Shock, stand out as being particularly excellent, and are an index of the high degree of excellence of the entire book.

W. T.

HEADQUARTERS

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THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The American Red Cross and the Great War. By Henry P. Davison, Chairman of War Council of American Red Cross. New York: The MacMillan Co. 1920. Price, $2.00.

The Fundamentals of Human Anatomy, Including Its Border Land Districts. By Marsh Pittsman, A. B., M. D. 343 pages. 101 illustrations. St. Louis: C. V. Mosby Co. Price, $4.00.

International Clinics, a Quarterly of Illustrated, Clinical Lectures and Special Articles. Volume II, 30th series. Philadelphia and London: J. B. Lippincott Co. 1920.

Diseases of Children. By John Lovett Morse, A. M., M. D., Professor of Pediatrics, Harvard Medical School. Third edition. W. B. Leonnard Publishing Co., Boston.

Exophthalmic Goiter and Its Nonsurgical Treatment. By Israel Bram, M. D., Instructor in Clinical Medicine, Jefferson Medical College. St. Louis: C. V. Mosby Co. Price, $5.50.

Practical Preventive Medicine. By Mark F. Boyd, M. D., C. P. H., Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Octavo volue of 352 pages with 135 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.00 net.

Basal Metabolic Rate Determinations. By Walter M. Boothby, M. D., and Irene Sandiford, Ph. D. Section on Clinical Metabolism. The Mayo Clinic, Rochester, Minn., and The Mayo Foundation, University of Minnesota. Octavo volume of 117 pages with 11 Tables and Charts of explanation. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $5.00 net.

A Manual of Pathology. By Guthrie McConnell, M. D., Associate in Pathology Western Reserve University, Medical School, Cleveland, O. Fourth Edition. Thoroughly Revised. 12mo volume of 611 pages, with 18 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.50 net.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph. D., M. D., Professor of Pathology in the University of Chicago, and in the Rush Medical College, Chicago. Fourth Edition. Revised and Reset. Octavo of 695 pages. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $7.00 net.

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S. Fourth Edition. Revised and Enlarged. 800 engravings. St. Louis: C. V. Mosby & Co. 1919.

Man's Unconscious Passion. By Wilfred Lay, Ph.D. New York: Dodd, Mead & Co. 1920.

Regional Anaesthesia. By H. Sherwood Dunn, M. D. 24 figures in the text. Philadelphia: F. A. Davis Co. 1920.

Psycho-Pathology. By Edward J. Kempf, Clinical Psychologist to St. Elizabeth's Hospital, Washington, D. C. 87 illustrations. St. Louis: C. V. Mosby Co. 1920. Price, $9.50.

The History of the American Red Cross in Italy. By Charles M. Bakewell, M. D. New York: The MacMillan Co. 1920.

Old at Forty or Young at Sixty. By Robt. S. Carroll, M. D. New York: The MacMillan Co. 1920.

Diabetes. By Philip Horowitz, M. D. 27 illustrations. 2 color plates. New York: Paul B. Hoeber. 1920. Price, $2.00.

Sex and Life. By W. F. Roby, M. D. Richard G. Badger: The Gorham Press, Boston. 1920.

Sleep Walking and Moon Walking. A Medico-Literary Study, by Dr. J. Sadger, Vienna. Washington, D. C.: Nervous and Mental Disease Publishing Co. 1920.

The Radiography of the Chest. Vol I. Pulmonary Tuberculosis, with 9 line diagrams and 99 radiograms. By Walter Overend, M. D. St. Louis: C. V. Mosby Co. 1920. Price, $5.00.

Hygiene of Communicable Diseases. By Francis M. Munson, M. D. Illustrated. New York: Paul B. Hoeber. 1920. Price, $5.50.

The Endocrines. By Samuel Wyllis Bandler, M. D., F. A. C. S., Professor of Gynecology in the New York Post-Graduate School and Hospital. Octavo of 486 pages. Philadelphia anl London: W. B. Saunders Company, 1920. Cloth, $7.00 net.

1919 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1,331 pages, 490 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, $12.00 net.

Hygiene: Dental and General. By Turner. St. Louis: C. V. Mosby Co. 1920.

Physiology and Biochemistry in Modern Medicine. By J. J. R. Macleod, M. D. Third Edition. St. Louis: C. V. Mosby Co. 1920.

BOOK REVIEWS

1919 Collected Papers of the Mayo Clinic, Rochester, Minnesota. Octavo of 1331 pages. 490 illustrations. W. B. Saunders Co., Philadelphia and London. Cloth, $12.00 net.

Volume eleven of the Collected Papers of the Mayo Clinic is the most pretentious issued and surpasses in value any that have preceded it. There are over 1300 pages on the work contributed by the group at Rochester, which is divided under the general subjects of the alimentary canal, uro-genital organs, heart, blood, skin and syphilis, head, trunk and extremities, nerves, technique and general.

No more valuable collection of papers is published in the English language than this collection published by Saunders from the Mayo Clinic. It is impossible in the space available to consider any of them individually but the Journal recommends to its readers the yearly purchase of this work. It is a postgraduate course brought to your home at little cost.

(Continued on pages 423, 439 and 444.)

The Wisconsin Medical Journal

Volume XIX MILWAUKEE, FEBRUARY, 1921 Number 9

ORIGINAL ARTICLES

AN OUTLINE OF TWELVE YEARS' STUDY OF HODGKIN'S DISEASE AND ALLIED AFFECTIONS.*

BY JOHN L. YATES, M. D.,

MILWAUKEE.

The purpose of this communication is to draw attention to rational methods of treatment which can lead to permanent recovery in some of the components of a complex disease usually held to be incurable and commonly subdivided into sundry clinical and pathological entities. Laboratory and clinical investigations upon which the subject matter is based have been conducted in conjunction with Dr. C. H. Bunting, and Drs. R. E. Morter, P. F. Clark, L. M. Warfield, C. H. Foerster, H. T. Kristjanson and Miss Anna Fitzgerald. Apparently dogmatic statements should be accepted as expressions of opinion based upon data presented in former publications.

The group of diseases includes: Hodgkin's disease (lymphatic anemia); acute and chronic lymphocytic leukemia; aleukemic leukemia (acute and chronic pseudoleukemia, large and small-celled lymphosarcoma, malignant lymphoma, chloroma? etc.); Banti's disease (splenic anemia, splenic pseudoleukemia); certain types of hypertrophic arthritis associated with adenopathy; a form of disease imitating elephantiasis, and probably myelocytic leukemia, mycosis fungoides and rare types of endothelioma.

The facts that warrant collecting these processes in one category are the similar pathogenetic manifestations indicated by clinical histories and by the failure of spontaneous recovery and the occasional final development of identical physiological and anatomical reactions if life be sufficiently prolonged, the similarity in the tissue changes and the blood pictures and the same or closely related bacterial content.

Clinical histories in composite show the previous or present existence of some focal irritation upon skin or mucous membrane which has been or still is a portal of entry, followed by localized but progressive and spreading enlargement of lymph glands or spleen. The development of the disease is irregular; periods of active progression are followed by periods of regression. The improvement is incomplete, so that the ultimate result is increase in disease. There are corresponding periods of malaise succeeded by intervals of comparative symptomatic freedom, though of slightly subnormal physical vigor. The result is decreasing resistance. Slight abnormalities in temperature occur during the early periods of exacerbation. These periods grow longer and more severe and the febrile responses become more marked, becoming irregular, intermittent or at times assuming the specific remittent type first described by Murchison and erroneously called Pel-Ebstein.

None of the forms of disease are self-limited once it has reached a stage at which it can be identified. All are prone to cause some identical changes if sufficiently chronic; sclerosis of the lymphadenoid tissues wherever affected; periportal hepatic cirrhosis; a secondary type of anemia and a series of changes in the blood picture which are in one phase or another common to all forms at some period and may be intermittently or constantly characteristic of one form.

The toxine involved has a special affinity for hematopoietic tissues, particularly the lymphoblastic centers, and also causes hyperplasia of connective tissues and of endothelium. Eventually the usual degenerative changes consequent upon chronic intoxication develop in various organs and significant among these is Laennec's cirrhosis.

Variations in the intensity and the amount and distribution of the irritant provoke different responses in the tissues primarily affected. They are the usual sequences of tissue reactions to toxic irritation. Early there is a stimulation with normal proliferative response, then the less normal, which may rarely cause neoplastic metamorphosis, but more often increasing intoxication

*Read at the Fifty-second Annual Meeting of the Medical Association of Central New York, Rochester, New York, October 7, 1920.

leads to exhaustion and necrosis. Under suitable conditions one or another or more than one tissue is principally affected and the character of the reaction—slight, moderate or extreme—determines the peculiarity of the response. The different responses have been variously grouped and sundry epithets attached to them. Confusion has resulted because of a multiplicity of names usually misapplied and because the border-line members of the various groups are more or less indistinguishable.

Hodgkin's disease, as described first in this country by Dorothy Reed, is taken as the basic type because it shows well-developed changes in all of the tissue elements subject to early involvement. At first there is lymphoblastic stimulation, then irritation, degeneration, and finally necrosis, causing eosinophilic infiltration and sclerosis. Endothelial irritation results in the formation of the giant cells and withal there is a complete loss of the glandular architecture. The end result is an almost complete sclerosis of the glands, but this is seldom seen, because death intervenes. It occasionally happens that the connective tissue proliferation becomes so over-active as to imitate a splindle cell sarcoma even in invasiveness but shows little liability to recurrence and the occurrence of true metastasis may be questioned or the endothelial elements may exceed the limits of normal proliferation and produce tumor-like tissue which is invasive and will recur if incompletely removed and may even metastasize. Chronic forms of the disease can thus develop during late stages, histological evidence of some kind of a malign neoplasm. If the disease be traced from its inception, when the first reaction to the irritant has not yet taken on its characteristic manifestations, and is followed through the successive phases leading to the development of the terminal lesion, convincing proof is found that the disease is inflammatory in origin and usually retains its granulomatous character.

If the toxin-resistance reaction provoke principally an intense hyperplasia of the lymphoblastic centers and the daughter cells are extruded over-rapidly into the circulation, there results a picture which is called lympocytic leukemia. This is farther subdivided into acute or chronic types as the bulk of the daughter cells are of the immature, large or mature, small forms. Commonly the affected glands are mainly masses of lymphocytes of one form or the other. Increased sclerosis and proliferated endothelium can produce transitional changes which approximate the Hodgkin's histopathological picture. Also the excess lymphocytosis may disappear and a blood picture obtain that can be identical with that of Hodgkin's disease. Or an indisputably typical Hodgkin's disease may show temporarily the blood picture of lymphocytic leukemia. Should the conditions which produce lymphocytic leukemia be effective, except that the lymphocytes are not forced into the circulation but remain in the glands, the disease is called aleukemic leukemia or pseudoleukemia; if they markedly invade the periglandular tissue, lymphosarcoma. It is, minus the blood picture, identical with leukemia. Changes between these types occur. Likewise the relationship to Hodgkin's disease is manifest in some of the glandular changes and the blood pictures are very similar.

Banti's disease, primary splenic anemia, suspected by Banti of being the splenic type of pseudoleukemia, is probably the result of a hematogenous splenic infection of intestinal origin. The characteristic splenitis develops in some chronic types of pseudoleukemia and Hodgkin's disease, both of which affections can also cause atrophic cirrhosis of the liver. Rarely Banti's disease is associated with lymph gland enlargements. The blood picture is that of early Hodgkin's disease. This clinical evidence is supported by experimental observations.

Children and adults past middle life are occasionally subject to a very chronic type of hypertrophic arthritis associated with considerable glandular enlargements. There is a blood picture like that seen in early Hodgkin's disease and the affected lymph glands show the changes of pseudoleukemia.

There is a rare form of recurrent, subcuticular cellulitis, lymphangitis and lymphadenitis with sudden exacerbations producing pain, intense headache, high fever and delirium. A chronic edema imitating elephantiasis results. We have seen two examples of this type. The blood picture and glandular changes are like pseudoleukemia.

Myelocytic leukemia is included in this group provisionally because the toxin acts upon all the bone marrow elements and this action could account for all manifestations. Evidence sustaining this hypothesis is seen in the constant increase in the size and number of platelets, the presence of megalokaryocytes in the circulation, the occa-

sional presence of myelocytes in the blood in lymphocytic leukemia, pseudoleukemia and in Hodgkin's disease and in the occurrence of adenopathy with myelocytic leukemia. The myelocytes may disappear from the circulation during myelogenous leukemia and then the blood picture approximates the pseudoleukemic type. We have had an opportunity to treat one patient suffering from this disease, but only temporarily, and we have therefore no first-hand information.

A study of one man suffering from mycosis fungoides showed a blood picture of Hodgkin's disease and lymph glands imitating pseudoleukemia. Lack of confirmation of these observations necessitates including this disease as a probability only.

Similarly we have seen one patient suffering from a recurrent cervical involvement who had been previously subjected to an incomplete extirpation. A diagnosis of endothelioma had been made from the tissue then excised. At a second operation there was noted an area of tumor-like invasion of muscle as well as numerous enlarged glands. Both an endothelioma and Hodgkin's disease were recognized microscopically. The blood picture was that of Hodgkin's disease. Death resulted two years later from intrathoracic disease which was of the Hodgkin's type.

In this connection it is well to bear in mind that the hyperplastic type of tuberculous adenitis can imitate Hodgkin's disease so accurately that only histological examination may make the diagnosis. It is possible that this disease also can initiate tumor-like proliferation of endothelium. An observation indicating the probability of this sequence of events could unfortunately not be completed because of the loss of tissues obtained postmortem.

The bacteriological side of the question is not settled. Diphtheroid organisms are numerous and widely distributed so positive cultures are readily obtained from many kinds of diseased and relatively normal tissues. But there are many kinds of diphtheroids. Since Bunting obtained his first positive culture in 1912, he has cultivated diphtheroid bacilli from virtually all tissue delivered to him promptly after removal in which the histological examination showed the presence of one of these disease pictures. The blood changes have also been confirmatory. Diphtheroids have been cultivated from tissues showing other lesions, e. g. goitre, tuberculous adenitis, etc., but these organisms are dissimilar both biologically and morphologically to those under consideration. The organism in question adapts itself with difficulty to special, artificial media upon which is grows feebly. It will not grow at all upon ordinary media, has a low oxygen requirement, and does not produce pigment under ordinary cultivation.

Injection of man with killed cultures has produced the characteristic early focal lesions and the transient appearance of the early Hodgkin's blood picture. Injection of living organisms has caused death in guinea pigs, rabbits, monkeys and horses with evidence of an acute process similar to the human disease and also exhibiting characteristic changes in the blood picture. In no instance has a chronic type of the disease been established though chronic local reactions have been reproduced. In all of the above-described varieties of the disease, diphtheroids of a type have been found to be present and have been repeatedly obtained from the tissues removed at intervals from the same patient, the most being seven times during five years. These observations and others to be mentioned later have made us believe in a causative relationship and not a chance invasion of the organisms.

Methods of treatment are clearly defined by the pathogenesis on the one hand and morbid physiology on the other. First, the portal of entry must be removed. Second, the diseased tissue must be sufficiently eliminated so that the balance of power is placed permanently on the side of the individual. Third, treatment must be continued until the infection is destroyed. Fourth, the treatment must conserve the regenerative capabilities of the entire hematopoietic system else continued existence becomes impossible.

A study of the varied therapeusis employed to date is invaluable. Nearly every drug from arsenic to benzol has been tried. Surgical excisions limited to obviously diseased tissues, vaccines, sera, toxins, heliotherapy and X-ray or radium emanations have been employed singly and in combinations. The results have been the same. When the treatment has failed to conform to the requirements of the disease as outlined above the benefits have been temporary, though occasionally apparently disease-free intervals have been reported of a few years' duration. The limit so far is four. Palliation is always desirable and commendable, but it is never comparable to eradication of the disease. More-

over, treatment that will achieve eradication is the more certain to provide optimal palliation.

The problems in treatment presented to the clinician are: What is the type of the disease? Is it in a curable stage? Are attempts at palliation warranted? What procedures and in what sequence promise the best result?

Statistical studies have revealed a little of practical value. Age, sex and race play important roles. Males are more prone to the infection. Up to thirty they are likely to develop Hodgkin's disease, beyond that the leukemic varieties are the rule. Females up to eighteen are unlikely to be affected. Between eighteen and thirty-five they have Hodgkin's disease and after that the leukemic reactions. Jews are particularly susceptible and are usually less resistant after onset.

Predisposition to the disease is not inherited and the infection is not communicable. Individuals in all walks of life are affected. It is most prevalent among those who neglect foci of chronic irritation. Our assumption is that the bacilli are widely distributed, that many are infected but few are susceptible.

A diagnosis is usually possible even in early stages if the combined data obtained from the history, a thorough physical examination, blood counts and intradermal tuberculin tests be properly interpreted. An excision of a gland for histological examination should be avoided, as this slight traumatism has preceded a rapid dissemination.

Eradication of the probable portal of entry is usually simple. Tonsils are the chief offenders. If the superficial glandular involvement is very slight, and it is always more advanced than external examination indicates, X-ray treatments will suffice. Otherwise extirpations are safest if they are sufficiently radical. Radical extirpation means the removal in one mass of all of the tissue that can be taken from a region without causing functional impairment, together with the tissues connecting this region with neighboring regions liable to involvement by direct extension. Less thorough resections are dangerous. Should other regions be considerably involved, they should be successively resected if maximum benefit is to be secured. These operations are generally tolerated well and in the long run are less burdensome than protracted radiation and by far less dangerous.

Postoperative radiation of excised areas is important. During an approximate period of three weeks these areas are subjected to massive dosage of filtered rays to the point of skin tolerance, with a minimum number of exposures to each area, but with repetition of treatment to maintain saturation of the tissues with X-rays. The dangers of untoward effects of X-ray and radium are too little recognized. Too prolonged exposures cause an underactivity of the lymphoblastic centers when hyperactivity is essential. Too great total exposure is likely to promote chronic nephritis. The use of radium is less satisfactory than proper X-ray administrations because of protracted exposures and possibly because of more injurious action upon the lymphoblastic tissues. Whatever the method of radiation, it should be controlled by blood counts and no lymphopenia should result.

Since we have administered immune serum as a routine there has been marked improvement in results. This is another bit of evidence supporting the belief that certain diphtheroids are the causes. Not all horses inoculated with living organisms obtained from cultures of human tissue give potent serum. The serum obtained at intervals from the same animal varies in potency. We have been unable to standardize the methods of making and giving the serum and therefore have refrained from furnishing it to others. At best it is only an adjunct in treatment and is of material benefit principally when extirpation has reduced the total amount of disease. Apparently it makes tissues more responsive to radiation and is helpful in reducing physical obstruction caused by the pressure of diseased tissue.

Splenectomy in Banti's disease or when splenomegaly is of the Banti type is to be done as a routine under suitable conditions. There is a rare form of primary nodular splenic involvement in which splenectomy is demanded. We have been over-conservative in removing the spleen and are finding that under certain conditions the physiological effects are unexpectedly favorable.

After-treatment is designed to promote the general physical welfare—fresh air, sunshine, proper diet, tonics, etc., and successive radiations or excisions as indicated by the blood picture and evidences of recrudescence.

This in a general way sketches the treatment thus far found to be most effective. The results obtained up to 1918 have been published. Since that time an exact tabulation has not been made

and none can be satisfactory until next year. We assume a cure is established when a patient has been without evidence of the disease for five years as no recorded free interval, when there has been a certain diagnosis, has extended so long. In brief, we can say that Hodgkin's disease and pseudoleukemia are curable in their early stage in over three-quarters of patients. This proportion falls rapidly thereafter. In general the pseudoleukemic processes are less malign. We have never had an opportunity to treat a patient in the early stages of lymphocytic leukemia. Palliation can be secured in later stages and we believe a cure is possible though this form is much more malign than the preceding. The cure of Banti's disease is established. The relative improvement following splenectomy when the splenic involvement is part of a more generalized disease is quite as great if operation is done promptly. The arthritis can be retarded, the pains reduced, and but little more can be accomplished. The progress is very slow. The elephantiasic forms have responded very favorably and both promise recovery, but with some permanent enlargement.

In conclusion, we can state that our series of one hundred twenty-one patients includes those who have been treated and accurately followed from less than one to more than eleven years and that no other such observations are recorded. In this series of patients are examples of apparent recoveries amounting to cures, if our definition is correct. These are the only lasting recoveries upon record in which the diagnosis was established scientifically and the subsequent progress has been controlled by the same observers.

Medical history shows that great enthusiasm follows the popularizing of some new or rediscovered therapeutic method. So it was after Billroth advocated arsenic and after the introduction of salvarsan. Like reactions followed the successes attributed to benzol, to vaccination and to X-ray. Just at present radium is popular.

We think we have given the reasons why empirical and symptomatic methods must fail. We know that our conception of the morbid processes must be partially correct by the testimony of a few successes. Therefore we feel justified in urging all who are treating this disease to accept methods which have been proved effective, to make them better and more available for a large family of sufferers.

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WHY THE TRAVELING TUBERCULOSIS CLINIC?

BY OSCAR LOTZ, M. D., AND A. A. PLEYTE, M. D.,

MILWAUKEE.

The health demonstration work done at Framingham, Mass., under the direct supervision of the National Tuberculosis Association has indicated that tuberculosis exists to a greater extent in a community than has generally been appreciated by physicians. The large number of active cases of tuberculosis brought to light through medical examination work and consultation service, has shown us opportunities and obligations in the field of tuberculosis discovery.

Similarly the free demonstration clinic and consultation work which has been carried on for some time in Wisconsin by the Wisconsin Anti-Tuberculosis Association has confirmed part of the work done at Framingham. Our work has

mainly a twofold purpose; first, to discover tuberculosis in its early stages; second, to carry on an intensive, educational campaign. Which of these purposes is the more important, it is hard to venture a guess, for on the one side by ferreting out the early cases of tuberculosis many lives are saved which would otherwise be lost, and many sources of infection are brought to light and placed under control. On the other side, *through education,* the danger signals of tuberculosis are made known, the object of the clinic is explained, people are urged to see their physicians earlier, they are urged to live rightly and they are taught the basic truths of right living, and again, physicians are taught the early diagnosis of tuberculosis and are interested to take a more active interest in tuberculosis and public health work; so we see that the ferreting out of the unknown cases of tuberculosis, and the intensive educational campaign against this disease go hand in hand.

We wish to emphasize the need for this clinic work and consultation service more clearly before relating accomplishments and results of this work. The Wisconsin Anti-Tuberculosis Association has been waging a continual war against tuberculosis since 1908. This campaign has been conducted in all its known phases, from all known angles, and with all the equipment available. There remains, however, much tuberculosis which is unrecognized. In fact, we know there are at least twice as many cases of active tuberculosis which have not been discovered as there are cases which are recognized and uncovered. We know, too, that many of these unknown and undiscovered cases act as sources of infection to others. We do not mention this prevalence of tuberculosis to frighten you, for there is nothing for us to be frightened about, nor do we point out this prevalence in a spirit of criticism of the physician, for this too is unwarranted. We wish, though, to have you know that while tuberculosis is on the run, that while the number of deaths from tuberculosis are on the decrease each year, that while a bigger and stronger organization is fighting tuberculosis each year, and that while much more has been accomplished in Wisconsin than in many other states, there is still much to be done. In 1909 the death rate from tuberculosis in Wisconsin was 107.8 per 100,000 population. In 1919 the death rate was 82.5 per 100,000. In other words, there has been a 24 per cent decrease in the death rate in Wisconsin in the past ten years. This means that more than 3,000 lives would have been lost than were actually lost, had the 1909 death rate continued, and had we had no organized campaign against tuberculosis. There were in 1919 but four states in the Union with a lower death rate than Wisconsin. So we have a far safer state to live in than the average. We may consider ourselves fortunate for the progress that has been made and also for the enviable position this state holds. We wish you to realize further the fact that in a state in which there is a lower tuberculosis death rate there is also a lower death rate from communicable disease of all kinds. The tuberculosis programme and public health programme are similar. The results so far attained in Wisconsin can be attributed largely to the organized efforts of the Wisconsin Anti-Tuberculosis Association, and the co-operation of the physicians throughout the state. Future progress in the tuberculosis campaign in Wisconsin means a continuation of co-operation between the Wisconsin Anti-Tuberculosis Association, the physicians of Milwaukee and the state, and the people of Milwaukee and the state. It means, too, the campaign of education must continue, organization must be made more perfect, and the stimulation in interesting physicians in the diagnosis of tuberculosis must go on by means of clinics and consultation service through all parts of the state.

It means, further, that nurses must be taught public health work. The Wisconsin Anti-Tuberculosis Association has taught and graduated thirteen classes in its public health nurses course. Several classes of health service workers have also been graduated. Future progress means still further, that our consultation service to the sanatoria in Wisconsin shall not only be continued, but shall make Wisconsin sanatoria as a whole second to none in the United States.

A word here, to those of you who have not participated in any of the traveling chest clinics, may help to explain how these clinics are conducted. Educational and publicity material are sent out in advance of the clinic *by* the Wisconsin Anti-Tuberculosis Association, its advance social service workers, county nurses, Red Cross nurses, physicians and people interested in anti-tuberculosis and public health work, *through* talks in factories, theaters, clubs, movies and other public gatherings; through newspapers, posters, dodgers and other written word; through pulpits, schools, contact work and other spoken word; in fact in any legitimate way to let people know. The time and

place of the clinic are determined three weeks in advance if possible. Instructions and help are sent out from the office in ample time to allow suggestions to be carried out by interested people, workers, nurses and physicians in the community. Special invitations are sent to physicians and nurses, asking their co-operation and inviting them to bring suspicious and doubtful cases to the clinic for examination and consultation. Additional time is taken with local physicians in educating and teaching them in the early diagnosis of tuberculosis and differential diagnosis of pulmonary disease. The patient's history has been taken by the nurse in the waiting room. Nurses are instructed and disciplined in history taking before the clinic opens. Each patient examined is then given a private dressing room in which to remove clothing to the waist line. While removing his clothing the patient is instructed how to breath, cough, and count, and how to cover the mouth in coughing with a paper napkin. The nurse then puts a loose white cape on the patient and accompanies the patient to the examining room. The examining room is as private as any physician's private office. Each patient is given a thorough chest examination. Special advice, but with the problems of the local physician in mind, is given each patient. Examination blanks are filled out in triplicate, one copy being retained by the W. A. T. A., one by the health department, county nurse or Red Cross nurse, and the third is given to the patient with the suggestion to take it to the physician of his choice. At an outgoing desk the patient has emphasized to him the importance of seeing his physician, of having defects and disability corrected, disease treated, etc. He is also given literature to take home to read and pass on to others.

To carry on these clinics and consultation service to physicians, however, calls for a partial departure from the time honored ethics of our profession, as you will note by the above brief resume of how a chest clinic is conducted. We have to *go after* the undiscovered cases of tuberculosis if we would find them. A private physician cannot go out after business; this is unethical. But an association whose aim and work is the control, eradication, and prevention of tuberculosis, can and must take a more progressive attitude in the matter. We must as an association educate people to know the early symptoms and manifestations of tuberculosis; we must teach them to visit their physicians earlier; and we must provide clinics where physician and patient may meet to receive help when desired. The free chest clinics, carried on throughout Wisconsin by the Wisconsin Anti-Tuberculosis Association in co-operation with local physicians, have proven very successful in three ways; first, in educating the people through the state relative to the early manifestations of tuberculosis; second, in teaching physicians and helping them in the diagnosis of doubtful cases; and third, in ferreting out the undiscovered cases of tuberculosis. From June 28, 1919, to Oct. 9, 1920, we examined 5,755 people in various parts of the state without one cent of cost to them. Nine hundred and fifty, or approximately 16 per cent, of this number showed either suspicious or presumptive tuberculosis in one of its many forms. Many of these people found out for the first time what was causing their ill health. We had intended to give you a brief resume of the findings of tuberculosis as well as other diseases found in all these 5,755 cases. We could not find time, however, to go over more than 1,303 cases. These 1,303 people were the total number examined more recently at four clinics, namely, La Crosse, Fond du Lac, Wausau and Antigo. We chose these four because they were different types of clinics. For instance, the clinic at La Crosse, held in conjunction with the meeting of the State Medical Society, is representative of the larger type of clinic. Five hundred and seven people were examined by nine physicians in two days, working a total of 198 hours.

The clinic at Fond du Lac I conducted alone for eight days. I spent 80 hours actual time in examining patients and examined 248.

The clinic at Wausau was a three-day clinic in which five examiners worked a total of 115 hours and examined 333 patients. (I wish to add an interesting note here. About a year before we held a clinic at Wausau in which three examiners were employed. They examined 74 patients. This year we doubled the number of examiners and more than quadrupled the number of examinations.) The clinic at Antigo was conducted by two examiners for two and a half days. We worked hard for 52 hours and 215 were examined. Totaling the four clinics mentioned, in which 1,303 people were examined, we find the total time consumed in actual examinations was 445 hours.

The time represents actual time spent in inspection, palpation, percussion and auscultation of the patients. I believe the findings in the 1,303 cases

we have worked out are quite representative of the total 6,000 and more examined to date. While the traveling demonstration free chest clinics were designed to discover tuberculosis, we find there are as large a percentage of cases of eardiac disease as there are cases of pulmonary disease. There were nearly three times as many cases of either teeth or tonsil trouble as pulmonary or eardiac disease. There were also quite as many cases of pulmonary disease other than tubereulosis as there were of active tuberculosis. I mention these facts to show you that many other diseases were noted at the same time and their sum total is probably greater than the sum total of suspieious and presumptive cases of tubereulosis.

A few snappy tabulations, I believe, will be interesting.

RESUME OF DIAGNOSES IN 1303 PEOPLE, MEN (386), WOMEN (466), AND CHILDREN (451), EXAMINED IN FOUR RECENT CLINICS (LA CROSSE, FOND DU LAC, WAUSAU AND ANTIGO).

Disease.	Total No.	Per Cent
Presumptive Tuberculosis	96	7.3
Suspicious Tuberculosis	79	6.0
Healed Lesions Tuberculosis	43	3.3
Pleurisy, Suspicions TBC	15	1.1
Pulmonary disease other than TBC	133	9.8
Post "Flu" conditions	42	3.2
Bronchial Asthma	32	2.4
Post-Pneumonia Processes	13	.9
Emphysema	3	.2
Pneumokoniosis	5	.3
Chronic Bronchitis	38	2.8
Contact cases of TBC	211	16.1
Sputum Exams. recommended	155	11.8
San. Care advised (immediately)	66	5.0
Social Follow-up	201	15.4
Cardiac Disease	128	9.8
Thyrotoxicosis	108	8.3
Teeth Decayed	284	21.7
Tonsils and Adenoids	293	22.4
Lab. Exams. other than sputum	103	7.9
Normal	358	27.4
Referred to Physicians	360	27.6
Carried Insurance	516	39.6
Enlarged Glands (Cervical)	68	5.2
Laryngitis	44	3.3
Rachitis	16	1.2
Bone and Joint Disease	10	.7
Hay Fever	5	.3
Bright's Disease	3	.2
Arteriosclerosis	3	.2
Scoliosis	2	.14
Neuralgia	2	.14
Scabies	2	.14
Lead Poisoning	1	.07
Eczema	1	.07
Enuresis	1	.07
Cardio-vascular	1	.07
Infantile Paresis (old)	1	.07
Varicocele	1	.07
Chronic Constipation	1	.07
Tuberculous Glands	1	.07
Appendicitis	1	.07
Hodgkin's Disease	1	.07
Fresh Air School (advised)	19	1.4
Periodical Exam. (advised)	17	1.3
Tuberculin Test (advised)	4	.28

Men, 386; Women, 466; Children, 451.

RESULTS IN OPEN TREATMENT OF FRACTURES.*

BY J. F. SMITH, M. D., AND M. L. JONES, M. D.,

WAUSAU.

In this brief report of results obtained by the open treatment of fracture it is not our purpose to discuss the relative merits of the open and closed methods of treatment, nor the advantages and disadvantages of the various operations that have been proposed, nor of the different deviees that have been developed by those who have advocated open treatment. It is our purpose to briefly summarize our methods and results in a group of ninety-seven fractures in which we have employed open treatment in one form or another.

Selection of cases: It has been our custom to treat by the open method only those cases in which, in our judgment, it was impossible to *secure* and *maintain* satisfactory approximation by the older methods. It is recognized that there exists a wide differenee of opinion as to what should be regarded as satisfaetory approximation. End to end apposition of one-half to two-thirds of the fraetured surfaee, with good alignment and without rotation deformity, we have regarded as satisfactory without reeourse to open methods. In cases in whieh these conditions eould not be seeured and maintained we have employed open treatment unless there existed general or local conditions whieh contraindieated operative measures.

Methods employed: We have endeavored to employ in each individual case that means of fixation which seemed easiest of applieation in the particular eondition presented, provided it suffieed to secure and maintain a satisfactory reduetion until the proper fixation dressing of plaster or splints could be applied. Plaster casts, with windows eut

*Read before the Tri-State District Medical Society, Oct. 4, 1920, Waterloo, Iowa.

out for after care of the wound, have been the means of fixation most frequently employed. Where plates or bands have been used it has been our custom to reopen the wound under local anesthesia and remove the plate two or three weeks before removal of the fixation dressing so as to allow time for the wound to heal before the patient's discharge. In open operations, particularly on the long bones, we have been impressed by the frequency with which strands of muscle, fascia, or periosteum have been found impacted between the ends of the fragments, often in such a location as to render entirely impossible anything like complete reduction by indirect methods.

After care: Patients who have had fractures treated by the open method should be given massage and active and passive motion after removal of the fixation dressing in exactly the same manner as patients treated by the closed method. The joints should receive early attention in order to avoid ankylosis, stiffness, and prolonged disability.

In our series of ninety-seven cases treated by open method the bones affected were as follows:

Femur, 26.	Lower jaw, 2.
Humerus, 11.	Upper jaw, 1.
Tibia, 14.	Patella, 6.
Tibia and fibula, 12.	Carpal bones, 2.
Fibula, 1.	Metacarpal bones, 2.
Radius, 5.	Metatarsal bones, 1.
Ulna, 1.	Olecranon, 2.
Radius and ulna, 6.	Both radii and both ulnae, 2.
Clavicle, 4.	

The means of fixation which we have employed are as follows:

Lane plate, 9 times.
Intramedullary graft, 2.
Bone graft (sliding), 4.
Bone screws or bone pegs, 5.
Silver wire, 33.
Kangaroo tendon, 1.
Parham-Martin band, 1.
Open reduction, no fixation device, 9.
Excision of fragment, 3.
Steel nails or screws, 6.

We have encountered the following complications:

Infection (simple fracture), 2 times.
Infection (compound fracture), 12 times.
Failure of union, 1.
Delayed union, 3.
Infection, failure of union—amputation (comp. fracture), 2.
Bone graft lost by infection, later union, 1.
Refracture by fall after removal of cast, 2.

Infection occurred in two cases of simple fracture which were subjected to open operation. In the first one of these the fracture was a comminuted fracture of the femur with several large loose fragments. The patient's condition was extremely bad on account of shock and exposure. The operation in this case consisted of simple circular wiring of the ends of two of the fragments with silver wire. Notwithstanding the very simple procedure a very severe infection ensued, which resulted in a long-standing osteomyelitis.

The second case was one with a comminuted fracture of both bones of the leg in an elderly man due to an explosion of dynamite. In this case there was extensive comminution of both the tibia and fibula with considerable bruising of the surrounding tissues. The operation carried out in this case consisted of a sliding bone graft, which was done about four or five days after the injury. Evidently the injuries to the surrounding tissues made conditions unfavorable for open operation; infection followed, with loss of the graft and a long-standing osteomyelitis which required several months to clear up.

In both cases healing finally occurred with union. In a few of the other cases there have been slight superficial infections which cleared up without any osteomyelitis after removal of the fixation device.

It has been our impression that the preservation of the periosteum is very important in open operations, especially on the long bones; that in no case should the periosteum be stripped or scraped from the bone field in applying the fixation device. In using the Lane plate we are very careful to preserve the periosteum, applying the plate outside the periosteum, and after the screws have been turned down securely they are given a half turn backward, in order to prevent pressure necrosis of the bone and periosteum.

"CHRONIC CYSTITIS."*

BY JAMES C. SARGENT, M. D.,
MILWAUKEE.

I assure you that this paper is to be of average length; yet, paradoxical as it may seem, the subject of chronic cystitis as an actual clinical entity could be amply covered in a single paragraph. The heading "Chronic Cystitis" is enigmatical. I purpose a discussion of the genito-urinary diseases of which chronic cystitis is a common symptom.

With the advance of medical science, headache has been transformed from a separate clinical entity to a symptom commonly indicating eye-strain, cardio-renal disease and such. Dyspepsia as a disease is rapidly passing and with our modern means of diagnosis more and more cases of gall-bladder, duodenal, and appendiceal disease are being recognized. In like manner the more frequent use of the cystoscope in the future will reveal less and less cystitis and more and more renal tuberculosis, pyelitis and the like.

The symptom complex, ordinarily termed cystitis, consists usually of frequent and painful urination, with the presence of pus, blood, and bacteria in the urine. In some instances the bladder discomfort is very marked, and the urinary findings very slight. In others the reverse occurs. Occasionally the occurrence of gross blood in the urine is the only evidence of a cystitis.

Upon final analysis, all cases of chronic cystitis fall into one of nine clear-cut and distinct groups.

Group 1. *Simple Chronic Cystitis* (or, if you please, chronic cystitis). This group is the graveyard for mistaken diagnoses without number. It is the most common classification for chronic bladder inflammation and yet is, in fact, the least commonly seen. To deny the occurrence of simple chronic cystitis would be an error. It does occur in both the male and female. The important point is that if the proper means of investigation are employed, the chances are extremely great that any given case of chronic bladder inflammation will be found to be itself secondary to some other definite and distinct pathology.

As a matter of fact it is very difficult to infect the mucous membrane of a normal bladder in a healthy individual with any of the common bacteria except the gonococous. It is a common experience to see the mucous membrane of a bladder rid itself of even a tubercular infection once the constant stream of tuberculous urine flowing over its surface is stopped by removal of the tubercular kidney. Is it any wonder, then, that simple chronic cystitis is almost a medical curiosity?

Simple chronic cystitis, when it does exist, is most frequently seen in the female and is always very mild. Seldom does the frequency necessitate arising more than once or twice at night and seldom does the urine contain more than a few pus or blood cells. When the symptoms or urinary findings are more severe some other causative pathology is present almost to a certainty.

Group 2. *Chronic Cystitis due to chronic urethritis.* Moderately frequent and painful urination with a few pus cells in the urine is occasionally seen in the male associated with a chronic posterior urethritis. The cause of the cystitis may be suspected by the history of a preceding gonorrhea and the diagnosis is cinched by endoscopic examination of the posterior urethra.

Rather severe frequency and burning are seen relatively often in women, the result of a chronic granular urethritis. The explanation of the prevalence in women undoubtedly lies in the ease with which any chronic infection of the genitals may spread to the urethra. This condition in the female, like in the male, is often the result of a gonorrhea, but in many instances other organisms are its cause.

In this class of cases the pathology is usually confined to the urethra, so that a complete microscopic examination of the catheterized urine reveals it to be normal, ruling out pathology above the internal sphincter. Through the endoscope the inflamed granular muscosa is readily recognized.

Group 3. *Chronic cystitis from urinary obstruction.* It is an urological axiom that residual urine sooner or later becomes infected. Stricture of the urethra or prostatic hypertrophy or cancer prevents the bladder from completely emptying itself and the urine remaining in the bladder finally becomes infected, resulting in a more or less severe cystitis. The associated symptoms of difficult urination with a small, weak urinary stream are sufficient to enable anyone to recognize this class of cases. Along with these cases of urinary obstruction might be mentioned the cystitis which results from infection of residual urine in a paralyzed bladder.

*Read before the Milwaukee Medical Society, Dec. 14th, 1920.

GROUP 4. *Chronic Cystitis with a foreign body.* This type of cystitis is of infrequent occurrence. A stone found in a female bladder is usually formed around a hairpin or catheter lost through the urethra and too large to be passed back out. Stone in the male bladder is not uncommon, but it is almost always in a bladder carrying residual urine from some form of urinary obstruction.

Chronic cystitis associated with foreign body in the bladder is very severe. The frequency and burning is often almost distracting and there is usually more or less pain in and around the bladder and radiating into the penis in the male. The urinary findings are also marked. The urine is very cloudy and often visibly bloody. A stained smear of the urine commonly shows a heavy flow of mixed bacteria. Both cocci and bacilli are present in large numbers.

The diagnosis of foreign body in the bladder is usually accomplished by X-ray of the bladder and cystoscopic examination of its interior.

GROUP 5. *Chronic Cystitis with Tumor of the Bladder.* Benign tumor of the bladder is frequently manifested only by intermittent hematuria. Cystitis, if it is present, is very mild and the urine is clear except at times when the tumor is bleeding. When malignant degeneration occurs and areas of the tumor become necrotic, infection soon supervenes and the patient developes an annoying frequency and burning associated with pus, and bacteria in the urine. Blood becomes a constant finding, at times in large amounts and at times in amounts only to be found with the microscope. Crustations from the surface of the tumor or actual chunks of tumor tissues are frequently passed when the disease is advanced. Eventually the general symptoms and findings of malignancy are to be noted.

Blood in the urine is a symptom that should assure any patient an immediate cystoscopic examination. Until cystoscopy is resorted to upon the first appearance of blood and mild bladder irritability, there can be little hope for the unfortunate group of people who are afflicted with tumor of the bladder.

GROUP 6. *Chronic Cystitis with Renal or Ureteral Stone.* Stone in the kidney or ureter is usually associated with more or less bladder irritability. This irritability of the bladder may be the result either of an infection of the bladder secondary to an infection in the region of the stone or it may be simply a referred condition. When there is an actual bladder infection the cystitis is moderately severe and the urine shows a definite amount of pus and bacteria. When the bladder irritability is referred it is not very severe, and the urine is relatively free from both pus and bacteria. Blood in the urine is a very variable finding in stone of the upper urinary tract. A very severe hematuria may symptomize a small ureteral stone en route to the bladder and a comparatively large stone may rest in the renal pelvis with slight, if any bleeding.

The diagnosis of stone in the upper urinary tract is commonly accomplished by the X-ray. It must always be borne in mind, however, that the X-ray is not infallible. All too frequently a patient is subjected to operation on the finding of a suspicious shadow, and no stone found. Then, too, Hyman*, has cautioned that 6 per cent of renal stones, 20 per cent of ureteral stones, and 60 per cent of bladder stones are missed by the X-ray.

Error in the diagnosis of chronic cystitis with urinary lithiasis is best eliminated by careful urine-analysis and complete urological examination, supplemented by radiography.

GROUP 7. *Chronic Cystitis with Pyelitis, Pyelonephritis, and Pyelonephrosis.* Any chronic infection of the kidney always transplants itself to the mucosa of the bladder. Pyelitis, pyelonephritis and pyelonephrosis are always associated with a cystitis of more or less severity. In fact, in many instances bladder irritability is the only manifestation of these infections. The frequency and burning and the amount of pus and bacteria in the urine correspond to the severity and acuteness of the renal infection. When the renal infection is very low grade the bladder irritability is often very slight and the urine only hazy with pus and bacteria. When the urinary infection is more severe, the bladder irritability is often marked and the urine quite cloudy with pus and bacteria. Blood is seen only in miscroscopic amounts, if at all.

The diagnosis of cystitis with chronic renal infection can be accomplished only by cystoscopy and catheterization of the ureters. The infection is localized by microscopic and cultural examination of the divided urines. The type of pathology present is recognized by divided renal function tests and pyelography. In a general way it is worth

*Hyman: Urol. & Cut. Rev., Mar. 1918.

while noting that the various cocci seem to have a predilection for the parenchyma of the kidney while the bacilli of the colon group have a predilection for the mucous membrane of the renal pelvis. The predominence of cocci or bacilli in the bladder urine often give a valuable clue to the type of renal pathology back of the cystitis.

Group 8. *Chronic Cystitis with Uro-genital Tuberculosis.* Chronic cystitis in young adults, when investigated thoroughly, is frequently found to be secondary to some tubercular infection of either the upper genital or upper urinary tract. In fact, the possibility is so great that any individual suffering a long-standing bladder irritability, and especially a severe one, certainly deserves an examination sufficient to either confirm or deny the presence of an uro-genital tuberculosis.

Chronic tubercular cystitis in the female is, of course, only associated with renal tuberculosis. Chronic cystitis in the male may be associated with either renal or epididimal tuberculosis. In the latter case it is well to remember that many a surgeon has had the mortifying experience of excising the tubercular upper genital tract to find that the cystitis was prevented from healing by a coexisting renal tuberculosis.

The irritability of a tubercular bladder is usually very marked. The frequency and burning is very annoying. The urine is usually very cloudy with pus. Gross blood in the urine is noted in about half of the cases. The ordinary cocci and bacilli commonly seen in the other forms of chronic cystitis are absent unless a secondary infection has been superimposed upon the tubercular infection. In fact, a pussy urine collected from a chronically inflamed bladder, and found to be free from the common staining bacteria, should be strongly suspected as being tubercular. With the proper diligence and a good technique, tubercle bacilli can very frequently be detected in the urine, making the diagnosis a certainty.

Through the cystoscope the characteristic changes of bladder tuberculosis are often easily recognized. By catheterization of the ureters and a study of the divided urines, the location of the original tubercular lesion is accomplished. Often only in this way is it possible to determine which kidney is the one involved and, what is more important, whether the other kidney is normal.

Group 9. *Rare forms of Chronic Cystitis Secondary to Other Pathology.* In connection with this class may be mentioned such unusual lesions as Hunner's ulcer, diverticulum of the bladder, pressure of extra-vesicle tumors, polyuria, yeast cystitis in diabetes, and eye-strain.

Even though the bladder symptoms and urinary findings of a chronic cystitis are not at all distinctive for any one of these causative conditions, due considerations of those symptoms and urinary findings is often rewarded by a strong suggestion as to the cause of the cystitis. In some instances symptoms referable to other parts than the bladder are very valuable in the differentiation of the various causes of a chronic cystitis.

Chronic mild pain in the region of the kidney is a very unreliable symptom in the differentiation of the causes of chronic cystitis. Classical renal colic, on the other hand, is bound to give a very definite indication of the cause of the bladder irritability.

Intermittent attacks of fever strongly suggests pyonephrosis or pyelonephritis as the cause of a chronic cystitis. A persistent slight afternoon temperature is suggestive of a tuberculosis.

Difficulty in voiding, with a small weak stream at once indicates the presence of some obstruction to the outflow of urine from the bladder or possibly the presence of a paralysis of the bladder. Paralysis of the bladder can easily be confirmed or denied by the presence or absence of other manifestations of spinal cord disease.

A general idea of the most probable cause of a chronic cystitis can often be obtained from a consideration of the severity of the bladder irritability. A long-standing, mild cystitis is usually associated with some chronic infection, either in the pelvis of the kidney or in the posterior urethra. A long-standing, severe cystitis is frequently associated with uro-genital tuberculosis.

Careful examination of the urine is often rewarded with definite information as to the causative pathology back of a chronic cystitis. A urinanalysis, to be of any value whatever, from a urological standpoint, must be done with a fresh catheterized specimen. A voided specimen, especially from the female, is commonly found to contain pus, bacteria, and often blood, all of which may be contamination and render the examination valueless. Urine which has stood for several hours is useless for examination, because of the rapid disintegration of cellular elements and the rapid growth of contaminating bacteria.

Gross blood in the urine always leads one to sus-

pect uro-genital tuberculosis or stone in the young adult, and bladder tumor in those past middle life. Microscopic blood in the urine may be found with any of the various causes of chronic cystitis.

Large amounts of pus in the urine most frequently indicates uro-genital tuberculosis, bladder tumor, or foreign body in the bladder. When large amounts of pus are found in the urine, without the presence of bacteria in the methyline blue stain, uro-genital tuberculosis is nearly always found to be the cause of the cystitis. The presence of many of the common staining bacteria does not, however, exclude the presence of uro-genital tuberculosis. The discovery of tubercle bacilli in the urine is pathognomonic of uro-genital tuberculosis.

Moderate or small amounts of pus in the urine, especially when many of the common staining bacteria are found in the smear, is indicative of some chronic renal infection. As a rule, bacilli of the colon group are indicative of a chronic pyelitis; whereas the various cocci are indicative of infection of the renal parenchyma.

A microscopically negative urine, i. e., one without pus, blood or bacteria, almost to a certainty rules out pathology above the internal sphincter of the bladder. If such is the finding in a case of chronic irritability, the cause of the cystitis is usually found to be a granular urethritis.

PNEUMOCOCCUS PERITONITIS.*

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The surgeon still continues to meet with some cases of peritonitis in his practice, although the number met with each year becomes lessened. The number met with by any individual surgeon of pneumococcus peritonitis up to the present time has been limited. During the years 1918 and 1920, two cases of pneumococcus peritonitis have come under my observation and which furnish the basis for the following remarks.

The history of case 1 is as follows:

Dorothy G, age 2½ years, entered St. Elizabeth Hospital March 15, 1918, referred by Dr. Finney. Her previous history was negative, excepting that she had recovered from a lobar pneumonia which had its onset three weeks previously. The temperature had been normal for more than a week, and three days previous to her entrance into the hospital she complained of abdominal pain; some vomiting and diarrhoea were present. The temperature upon her admission was 104 degrees F., the pulse 140. Upon examination the right rectus revealed a slight rigidity with the evidence of a moderate tumefaction subumbilical and to the right. The blood revealed a leucocytosis of 28,000. A diagnosis of a perforated appendix was made. Upon opening the abdomen a seropurulent fluid, odorless, of a yellowish-green color appeared. The coils of intestines were injected. Upon bringing the appendix to view I was surprised to find it normal in appearance. It was deemed advisable to remove it, as the patient was not subjected to any marked additional danger in its performance. Some of the material was taken for bacteriological examination. Tube drainage was used and the usual treatment for peritonitis was instituted, i. e., Fowler position and proctolysis. The first few days of the patient's convalescence were somewhat stormy and excepting for a spell of crying a week later when an evisceration occurred, and which necessitated resuture of the abdominal wall, complete recovery ensued. My laboratory reported an unmixed presence of penumococci organisms which agreed with the report of an examination of the same material sent to the State Hygienic Laboratory at Madison.

CASE 2. Anita V., Medina, Wis., age 5, referred by Dr. Ott, entered St. Elizabeth Hospital January 18, 1920. Her health had been normal up to four days previous to the onset of her present illness. The illness began suddenly with a high temperature, vomiting, frequent bowel movement and pain in the lower abdominal region.

Upon examination the little patient was found to be intensely ill. The temperature was 105.4 degrees per rectum, pulse 150, and evidences of a severe toxemia were present, as manifested by a slight cyanosis and some dyspnoea. The abdomen was not markedly rigid, yet there was present a right subumbilical tumefaction. The leucocytic count was 40,000, with a marked preponderance of polymorphonuclears. It was evident that a peritonitis existed but with an obscure origin. The present symptoms were incompatible with those produced by a perforation of an intra-abdominal viscus. A peritonitis of pneumococcus origin was thought of, for the information obtained in our experience with the previous case was still vivid in our memory. An abdominal exploration was deemed advisable, and to which she was subjected.

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*Read before the Tri-State District Medical Society, Oct. 4, 1920.

Upon opening the abdomen a marked amount of seropurulent fluid, yellow-green in color and odorless, appeared. It was then plainly evident that we were dealing with the same condition as in the previous case reported. Some of this exudate was taken for bacteriological examination. The reports of the State Hygienic Laboratory by Dr. Stovall and my own laboratory were agreed as to an unmixed strain of pneumococcus. It was not typed. This little patient had a most stormy convalescence, but she finally recovered and was dismissed from the hospital March 27, 1920. During this period it was necessary to make a suprapubic incision to give exit to an accumulation of pus which developed in that region. A few days later a pneumonia appeared in the right lower lobe which resolved. Following, an acute nephritis appeared which subsided after a week. Metastatic abscesses then appeared in various parts of the body, which were incised and the contents evacuated. An autogenous vaccine was made and used assiduously, but with apparently no avail. The condition of the little patient was truly alarming, for it appeared that she would not recover. Her emaciation was most extreme. As a final resort it was thought to use heliotherapy, "with nothing to lose and everything to gain." The little patient was therefore subjected to the sun's rays in a nude condition and with the most happy results, for within a very few days convalescence appeared and her full recovery ultimately ensued.

There is no doubt that this disease has a clinical entity and which is characteristic.

Summary of cases reported:

Von Brunn, in 1903, collected 57 cases of pneumococcus peritonitis in children and 15 adults; by 1906, Annand and Bowen state 91 cases were recorded, mostly in children. Additional cases to this list are recorded by C. R. Belgrano, Reforma. Med. April 7, 1917; four cases by Abt. A. I. N. Y. M. J. April 28, 1917; one case by Meredith, E. W. P. M. J. 1918; one case by MacWilliams, H. H. Brit, M. J. Feb. 22, 1918; one case by Edwards S. R. and Noble F. B. J. Ind. M. A. April 1, 1920; and the two cases occurring in my own practice, making a total of 102 cases.

Syms, in a careful review of the literature of pneumococcus peritonitis, states:

"It is a disease particularly affecting children. Up to the fifteenth year of age it is three times as prevalent as after that period.

"It is much more frequent among girls than among boys in the proportion of three to one.

"It may occur (1) as the only local manifestation; (2) as a sequel to some previous site of pneumococcus infection, i. e., lung, pleura, pericardium, ear, etc., or (3) as a part of a general septicemia in which other organs are simultaneously involved.

"It is found in two varieties: (1) As a diffuse general peritonitis and (2) an encysted or localized process. Some claim that these two conditions represent stages of the disease, and that there is always a diffuse peritonitis at first which later becomes localized by intestinal adhesions. Others (Michaut) claim that there are two distinct varieties of the diffuse."

On the other hand, some writers contend these varieties are produced by a difference in the virulence of the same organisms, and so are distinct types.

Again quoting Syms:

"The first stage is that of toxemia, the child being overwhelmed by the poison. There is a great depression and the patient is much more ill than the abdominal symptoms would indicate.

"The second stage is characterized by abdominal symptoms; the signs of advancing peritonitis.

"The third stage is characterized by a continuance of the signs of peritonitis with effusion. During this period there is often an abatement of the active signs of toxemia. The temperature may fall and the patient may seem decidedly less ill. If the pus has become encysted or localized there will be signs of intra-abdominal abscess or abscesses. The abdomen becomes distended; this particularly relates to the lower part of the abdomen, for the disease is usually subumbilical. When loculation has taken place there is usually an irregular swelling of the abdomen, one side being affected more than the other. One characteristic of the disease in its late stages is the protrusion of the umbilicus and its final perforation. There have been many reports of the discharge of pus through the umbilicus and this seems to be a condition almost peculiar to the disease. The discharge will be of the characteristic greenish-yellow, serofibrinous, odorless pus.

"Hector Cameron states his position very clearly when discussing the question of treatment. He regards the diffuse form of peritonitis as belonging to the early stages and not as representing a distinct type of the disease.

"Whether diffuse pneumococcus peritonitis is an early stage or a special form of the disease, the fact remains that it represents the period or condition of the utmost gravity. Annand and Bowen, analyzing 91 cases that had been bacteriologically studied and satisfactorily reported, found in the diffuse form a mortality of 86 per cent. In the same series of cases in the encysted form there was a mortality of but 14 per cent.

"In the same article Annand and Bowen describe 16 cases which had occurred in the East London Hospital for Children. All of the 16 of these cases were of the diffuse variety. Death resulted in all 16, showing a mortality of 100 per cent."

ETIOLOGY.

Abt states: "The disease represents a specific infectious process, but the route is difficult to establish. Two groups are recognized; (1) the primary or idiopathic; (2) the secondary, in which the peritonitis is subsequent to some pre-existing pneumococci lesion elsewhere, pleuropneumonia being the most common, and otitis media the next distinctive type is justified, although this path of invasion is obscure."

Fishbein, in his clinical article on "The Bacteriology of Peritonitis," states: "The anatomical character of the inflammation does not bear any relationship to the nature of the primary lesion when such exists, nor does it seem to be influenced by the presence of various bacteria alone or in combinations of various kinds. Various bacteria or the same bacteria cause the same or different forms of peritonitis."

SYMPTOMATOLOGY.

The disease presents a clinical picture that is characteristic and which should lead to diagnosis in the most primary cases. Its characteristic signs are sudden onset, extreme toxemia, vomiting and diarrhoea, very high temperature, and a very high leucocytosis with a high polymorphonuclear count. There is a noticeable absence of local pain, local tenderness, and local rigidity as compared with appendicitis or perforation peritonitis. Some have described the abdomen as having a "doughy" feel. Added to all this is the pneumonia aspect—cyanosis, slight dyspnoea, great depression, etc.

DIAGNOSIS.

A correct diagnosis of this condition is all-important. We must decide whether the case is or is not one of pneumococcus peritonitis and, if it is pneumococcus, whether it is diffuse or encysted, as operation is not indicated in the former, but decidedly so in the latter. The important points in the diagnosis are sudden onset, with no prodromal symptoms, the presence of an extreme toxemia and depression. It is often ushered in with a chill. High temperature is characteristic with a very high blood count, from 20,000 to 40,000. Diarrhoea may appear early or be developed in a day or two. Peritonitis with diarrhoea should always make one suspicious of pneumococcus. Early drowsiness, restlessness, and delirium point to the involvement of the nervous system from the intense toxemia, a condition we frequently find in pneumonic affections of the lungs. In pneumococcus peritonitis the constitutional symptoms overshadow the abdominal findings in contradiction to the early stages of a perforative appendicitis. There is no distinct point of tenderness. The abdomen has a peculiar "doughy" feel. The presence of fluid may be determined and is usually subumbilical and unilateral. A blood examination is of the utmost importance, as it may reveal a bacteremia.

J. Dubs states: "Pneumococci have been found in the urine even from the earliest phase of the peritonitis." Upon opening the abdomen evidences of a peritonitis are found with no local point of origin. The appearance and character of the exudate consisting of an odorless, seropurulent, yellowish-green color, containing a great amount of fibrin, is significant.

TREATMENT.

Most operators are agreed that an expectant treatment is to be pursued in those cases of pneumococcus peritonitis of the diffuse variety; this treatment should be open air, heliotherapy, supportive, proctolysis, and the Fowler position.

Operation is indicated and advisable where the exudate has become loculated, and where the extreme toxaemia and depression have subsided. The dictum of J. B. Murphy still holds good, "Where there is pus, evacuate—get in quickly and out hurriedly." Serum treatment has a legitimate use here as elsewhere in the body in pneumococci peritonitis.

CONCLUSIONS.

1. Pneumococcus peritonitis is a disease of childhood, affecting principally girls.

2. Its onset is sudden, manifested by a severe toxemia, and a very high mortality.

3. Two forms are distinguishable (1) diffuse, (2) encysted or loculated.

4. The symptomatology is characteristic.

5. Treatment is (1) expectant and supportive, (2) surgical.

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CHRONIC SUPPURATIVE OTITIS MEDIA.*

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I have chosen chronic suppurative otitis media as the subject of my discussion for two reasons: One is that the handling of these cases presents one of the everyday problems that confronts the practicing otologist, the other is that experience has led me to the conclusion that there exists a greater lack of a clear understanding of the clinical problems relating to chronic suppurative otitis media than of almost any other class of cases in our special field. Moreover, the subject of chronic otorrhea is of peculiar interest because in the successful solving of its several clinical problems we witness one of the really great achievements in modern medicine. This achievement could not have been accomplished except for the modern tendency to specialization. It constitutes, therefore, one of the strongest arguments in favor of specializing. There exists among the men practising internal medicine a much greater readiness to accept the view that certain fields of practice are better taken care of by men devoting their entire time to such work than one finds among those

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practising general surgery. I need but refer here to the tendency still prevailing among the men doing general surgery to undertake such operations in the field of oto-laryngology as the removal of the tonsils and the simpler intra-nasal operations, such as turbinectomy, or the operations on the mastoid for acute mastoditis, or even in cases of chronic suppurative otitis media. The objection to the general surgeon undertaking such operations is not that the technique of the operations cannot be mastered readily enough by the men practising general surgery. It is entirely possible to teach technique of operations successfully even to non-medical men. The objection to the surgeon undertaking to do such operations lies in the fact that the much more difficult problem, that of learning how to recognize the proper indications for these operations, requires the long training and greater experience of the specialist, and is far beyond the reach of the men practising in the field of general surgery. The tendency of medical men to undertake operations without first making themselves able to recognize the indications for such operations is perhaps the most flagrant abuse existing in the practice of medicine. There is no class of cases where this fact is better exemplified than in these cases of suppurative otitis media, for in these cases the clinical problems are of such a nature that none but the specialist in otology can be expected to understand them.

Before taking up a discussion of the more strictly otological problems in the handling of cases of suppurative otitis media, I wish to say a few words on the subject of the relation of the nose and throat to middle ear disease in general. It has long been recognized that pathological conditions in the middle ear, the cases of mild acute catarrh, those of tubo-tympanic catarrh, and adhesive middle ear processes, as well as the suppurative diseases of the middle ear, owe their origin, with but few exceptions, to an extension of pathological conditions existing in the nose and throat. This fact has led to a more or less wide misconception as regards the relation of the nose especially, but also of the pharynx, to middle ear disease. Many seem to assume that any and every alteration in the nose or throat may constitute an important factor in the etiology of middle ear disease. For example, there seems to be a more or less general impression that obstruction in the nose constitutes an important factor in the etiology of otitis media, especially in the chronic forms, such as the adhesive middle ear catarrhs, as well as in the cases of chronic otorrhea.

It may seem like a rational deduction that any obstruction to nasal respiration by altering the air currents in the naso-pharynx exerts an unfavorable influence on the normal function of the Eustachian tube, thus contributing to the etiology of an otitis media. This conclusion, however, is entirely a mistake, and is not supported by clinical experience. It is to be expected that middle ear trouble will be found associated not infrequently with obstructions in the nose, especially those due to the common irregularities of the nasal septum. As a matter of fact, I have never seen a case where there was any evidence supporting the view that intra-nasal obstruction exerts an unfavorable influence on middle ear disease. It is a well-known fact that complete occlusion of the nasal passages, such as occasionally results from a badly deflected nasal septum, or from a congenital atresia of the choanae, even where this atresia involves both sides, does not produce tubal trouble or other middle ear disease. The relation that actually exists between the nose and throat and middle ear disease is one either of extension of acute infection from these parts through the Eustachian tube, or else one of mechanical occlusion of the pharyngeal orifice of the tube, caused by such conditions as adenoids, hypertrophy of the posterior ends of the lower turbinated bodies, or from enlarged faucial tonsils, and occasionally from scar formations in the pharynx or from naso-pharyngeal tumors.

That chronic suppurative otitis media is recognized to constitute a serious menace to the individual is shown by the attitude of insurance companies, which refuse insurance to applicants with chronic otorrhea. This menace has not always been recognized, for there was a time when relatively little was known regarding this disease, when the view was generally accepted that chronic otorrhea was a condition not to be interfered with. It was believed that the discharge from the ear was an effort on the part of nature to rid the system of poisonous substances, and it was considered dangerous, therefore, to do anything that might check this discharge. This conclusion seems to have been based on the clinical phenomenon occasionally observed, where the sudden cessation of an otorrhea was promptly followed by symptoms of a fatal intra-cranial complication. We know now that this sudden cessation of an otorrhea is the result, not the cause, of an intra-cranial extension.

A clear understanding of the clinical problems which confront the otologist today in the treatment of cases of chronic otorrhea is gained, perhaps, most readily by studying the development of our knowledge of this disease. The first great advance in our knowledge of chronic suppurative otitis media was the fuller recognition of the serious complications occurring in the course of this disease. It was discovered that most cases of brain abscess, as well as many cases of sinus thrombosis and of meningitis, owe their origin to chronic suppurative otitis media, which may not have been causing any symptoms aside from a defect in the hearing and a discharge often so slight that the patient was not aware of its existence. Cases in considerable numbers came to light when examining soldiers, which showed all the evidences of a process which had undoubtedly existed since childhood in men who had no suspicion that they were suffering from any ear trouble whatever. These cases were as often of the type from which serious complications occur as of the simple, harmless type of chronic suppurative otitis media.

With a fuller appreciation of the danger existing in cases of chronic otorrhea came an imperative demand for the development of surgical measures for the eradication of this disease in those cases which did not respond promptly to local treatment. For a time it was the belief of many that the chief cause for the continuance of the discharge lay in an impairment of drainage through the tympanum, as the result of pathological changes in this region. This conclusion led to the development of the operation of ossicolectomy, which aimed at the establishing of adequate drainage through the attic and tympanum. A rather extensive application of this procedure in the treatment of intractable cases of otorrhea brought out the fact that relatively few of the cases which could not be cured by proper local treatment were ever cured by ossicolectomy.

About this time the splendid results from the operation on the mastoid in the treatment of acute suppuration of the middle ear became recognized. It was hoped that a similar method of opening the antrum, through operation on the mastoid, might also cure the intractable cases of chronic otorrhea. There followed a period when the Schwartze operation, that of opening the antrum through the mastoid, was carried out on these cases, the effort being made to keep the post-auricular opening patulent until the otorrhea was cured. This method was also doomed to failure, as was ossicolectomy, and it became apparent that somewhere between the antrum and the tympanum, that is in the aditus and attic, was a focus which had to be eradicated before the disease could be checked.

It was to Stache that the credit belongs of recognizing the fact that an exenteration of the aditus, attic and antrum, as well as of the tympanum, was necessary before the intractable cases of chronic suppurative otitis media could be cured. He worked out the principle of the radical mastoid operation for these cases, whereby a common chamber was made of the tympanum, the attic, the aditus, and the antrum, and the whole epidermised by extension of skin from flaps made from the membranous external meatus. This was indeed a great achievement. It offered for the first time a rational plan for the cure of those cases of chronic otorrhea which resisted all local treatment.

We come now to the final step in solving the clinical problems of chronic suppurative otitis media. This is the selection of cases which require the radical mastoid operation, as opposed to those in which local treatment should be employed. For a time this selection was made in a very simple manner. Local treatment was employed, and where this failed to bring the desired result in a reasonable time, in one, two, or three months, the radical surgical treatment was advised because of the danger that was supposed to exist in all the incurable chronic cases. This seemed to be a logical conclusion, for it was believed that danger of serious complications existed in all cases of chronic otorrhea. Subsequent study of this disease has brought us to a very different solution of this problem, for it has become apparent that the danger of a serious complication exists in only a relatively small number even of the intractable cases, and it became clear that the radical mastoid is indicated only in these few cases. I wish to make quite clear this point: that the radical mastoid operation is not undertaken to cure chronic otorrhea, but is undertaken to eradicate a diseased condition found in some cases of chronic otorrhea which we have come to recognize as a serious menace to the life of the patient. Many cases of chronic otorrhea exist without the presence of such a focus. In none of the latter is the radical mastoid operation indicated. It is this diagnosis of the dangerous from the non-dangerous type of chronic otorrhea that constitutes the culminating step in solving the clinical problems of this disease. The separation of

the dangerous from the non-dangerous type of chronic otorrhea rests on a simple fact in the pathology of this disease, namely, that in some cases the disease is confined to the mucous membrane lining the middle ear cavities, while in others the disease has invaded the underlying bone. It is only in the latter, where there is a bone-invading process, that there exists a serious menace from a possible complication. In all the others, and these constitute by far the larger proportion of the cases, the danger of a complication is not to be considered.

The recognition of this fact places before us a very definite clinical problem, namely, the diagnosis of a disease which is invading the temporal bone from one where only the mucous membrane is involved. In cases where the bone is not invaded, local treatment alone is to be employed. The radical mastoid is indicated only in cases where a bone-invading process can be diagnosed and not even in all of these. The diagnosis of the two types of chronic otorrhea can be made with great accuracy in most cases. Usually a single examination will suffice, but in others the decision can be made only after repeated examinations.

Before discussing the diagnosis of a bone-invading process, let us have clearly in mind what we mean by an invasion of the bone in connection with chronic suppurative otitis media. There are two methods by which this disease destroys the underlying bone. One is by the development of caries, rarely by the formation of sequestra; the other is by the formation of a cholesteatoma. Both conditions have many clinical symptoms in common, and we may therefore discuss them together.

Of first importance in diagnosing a bone-invading process is an examination of the discharge. The amount of the discharge is not of any special significance except that the discharge is more profuse in the more rapidly extending processes. On the other hand, a profuse discharge is characteristic of many cases of simple otorrhea and a discharge so slight as to escape the attention of the patient is often found in the most dangerous cases of bone involvement. The character of the discharge is of great importance. A discharge more mucousy than purulent is characteristic of the harmless cases where only the mucous membrane is diseased. In the bone-invading cases the mucous discharge is absent except at times, when an acute exacerbation may bring on a temporary muco-purulent discharge. The washings of a case of caries are quite characteristic. In these cases one sees a distinct granular sediment which sinks to the bottom of the water used for irrigation. In cases of cholesteatoma, the finding is still more characteristic. Here the whitish flakes of desquamated epithelium leave little room for doubt as regards the existence of this dangerous process. The character of the odor found in the discharge is an important point in the diagnosis. A serious form of chronic otorrhea rarely exists in the absence of an offensive odor to the discharge. This is particularly noticed in cases of cholesteatoma. This odor is quite different from the sweetish odor found in the simple type of otorrhea. A characteristic of the odor in the bone-invading disease is that it persists in spite of cleansing local treatment. Not infrequently the character of the odor will point toward a bone-invading process, even in cases where the discharge is so slight that it can scarcely be detected.

The next important point in the diagnosis of a bone-invading disease is found in an examination of the perforation of the drum membrane. The size of the perforation is of no special significance. As a matter of fact, harmless cases are just the ones where a large destruction of the membrane is often found. It would seem that the chief reason for the continuance of the chronic otorrhea in these cases, as well as for the recurrence of acute exacerbations, is the existence of a large perforation which leaves the middle ear sensitive and easily the prey of fresh infection entering either by the external meatus or the Eustachian tube.

The location of the perforation is of great significance. A centrally located perforation, even though it includes practically the whole membrane, is rarely, if ever, found in a bone-invading process, providing that the margin has not been involved. On the other hand, a marginal perforation, by this we mean one that extends to and involves the bony margin, is always an evidence of a bone-invading disease. This invasion may be restricted to the immediate region of the perforation, that is, to the walls of the tympanum, in which case it can be cured by simple local measures. On the other hand, a marginal perforation is always found in the dangerous cases where a cholesteatoma exists or where a focus of caries is located in the aditus, attic, or antrum, from which at any time a serious complication may result. The usual location of the marginal perforation is in the upper posterior quadrant, or in Shrapnell's membrane, but I have

seen marginal perforations located in the anterior segment, in cases where a cholesteatoma was found filling the antrum. I do not wish to be misunderstood regarding the significance of a marginal perforation. Such perforations are found almost without exception in the dangerous cases of otorrhea. On the other hand, a marginal perforation with involvement of the neighboring bone is found in those cases where the bone disease is circumscribed and confined to the region of the perforation, and where the danger of a serious complication, which is the justification for the radical mastoid operation, does not exist.

The significance of granulation and polyp formations has often been misunderstood in these cases. Aural polypi are found in the simple as well as in the bone-invading cases. On the other hand, recurring granulations and polypi, associated with a marginal perforation, are significant of a rather active process, and when a fetid odor to the discharge persists, or where the clinical evidences of a cholesteatoma are found, they indicate a type of process where procrastination along the line of local treatment should be discouraged and where the patient should be urged to permit the radical mastoid operation. I have witnessed the development of fatal complications in several cases of just this type. In this connection I wish to emphasize the fact that the presence of unilateral headache, when associated with a chronic otorrhea on the same side in which the clinical evidence of a bone-invading disease can be diagnosed, is an urgent indication for immediate surgical interference.

An invasion of the labyrinth in cases of chronic suppurative otitis media, brings up a number of interesting clinical problems. The formation of a fistula into the labyrinth, producing the so-called circumscribed labyrinthitis, is always an evidence of erosion of the capsule of the labyrinth; and therefore of a bone-invading process, usually of a cholesteatoma, and represents, therefore, a case requiring the radical mastoid operation. The diagnosis of a dead labyrinth in chronic otorrhea is not in itself an indication that an operation on the labyrinth or even on the mastoid is indicated. When in such a case the indications for a mastoid operation exist, this operation should include an opening of the labyrinth. An acute invasion of the labyrinth in cases of chronic, suppurative otitis media, is not always an indication for an operation. In the first place, where the acute labyrinthitis results in a depression of the function of the internal ear, but does not completely destroy this function, that is, either where there is a remnant of hearing left or where it is still possible to get a response by stimulation of the semi-circular canals, an operation on the labyrinth is not indicated. If there exists an indication for the radical mastoid, this should be carried out, but the labyrinth itself should not be opened. When an acute labyrinthitis develops, with complete suppression of function, the decision to operate on the labyrinth depends on the existence of the type of suppurative otitis media calling for the radical mastoid. Where the indications for a radical mastoid operation exist, this should be done and at the same time the labyrinth opened. When the acute labyrinthitis is the result of an acute exacerbation of a simple chronic suppurative otitis media, the process may be treated as though the labyrinthitis had developed in the course of an acute otitis media without symptoms of a mastoiditis, that is, without an operation on either the mastoid or the labyrinth, unless symptoms should intervene indicating an intra-cranial extension.

Another problem that not infrequently comes up in connection with the treatment of chronic suppurative otitis media is the advisability of doing a bi-lateral mastoid operation, and the indication for an operation where there exists a profound depression of the hearing function in the opposite ear. In deciding these questions one must keep in mind the fact that the radical mastoid operation may be followed by a more or less marked depression of the hearing function. For this reason the simultaneous operation on both mastoids should rarely be undertaken. Where the indications exist for an operation on both sides and where the hearing is approximately the same in both ears, do the operation on the side where the disease appears to be more active, and await the result. Should the operation not bring about an increase in the defect in hearing, then the operation on the opposite side may be undertaken. As regards the question of operating on the mastoid where this is the ear the patient has to depend on for hearing, this should be done only when the danger of a serious complication is imminent, as for example, when the process is complicated by a more or less severe one-sided headache. Even then it is better to do a modified radical operation, leaving the ossicles and tympanum undisturbed but cleaning out the focus of danger in the aditus and antrum. Should the

conservative operation in such cases fail to put an end to the discharge, this is not a serious objection to the procedure, since the object for which the operation was undertaken, namely, the eradication of the dangerous focus, has been accomplished.

One not infrequently sees a patient, and the physician, too, very much concerned because the end result after the radical mastoid leaves a discharge which persists because of a patulent Eustachian tube. This is not ground for serious concern. The object for which the radical mastoid was undertaken was not primarily to check a discharge from the ear, but to eradicate a focus of disease involving the bone somewhere in the attic, the aditus, or the antrum, which focus constituted a serious menace to the life of the patient. When the operation leaves this region dry, the object for which the operation was undertaken has been accomplished, even though the tympanum continues to be moist, because of the persistence of infection in the Eustachian tube.

THE ST. ANDREW'S INSTITUTE—FOR CLINICAL RESEARCH.*

BY NEIL ANDREWS, M. D.,

OSHKOSH.

This summer it was my good fortune to spend a part of my time at the St. Andrew's Institute. The interest awakened in its work on the part of the profession not only in the British Isles, but in our own country as well, together with the far-reaching purpose of its organization and the fame of its founder, leads me to the presentation of this paper.

The Institute owes its origin and inspiration to Sir James MacKenzie. The name itself is one that immediately attracts attention. It has been said that "A young man on one end of a log with Mark Hopkins on the other constituted a university." It is equally true that a young man on one end of a log and Sir James MacKenzie on the other would constitute a medical school of the finest type and the highest class.

Nowhere, in at least the English speaking world, is a name more familiar to the general practitioner. About all we know concerning the heart has been acquired either from himself or his pupils. His enthusiasm and love for his work; his keenness as an observer; his patience and painstaking efforts in recording his observations; his inventive genius as manifested in the polygraph and its interpretation; his amazing grasp of detail and application of his clean-cut logical mind in the classification of his work are known by medical students the world over.

At the very zenith of his greatness he has given up his London practice, taken up his residence at St. Andrew's, and out of ardent love for medicine, and with an all-compelling belief in his method for the education of medical men along lines that insure progress in the prevention of disease and the betterment of the race, has given himself to the task without money and without price.

One cannot remain in his presence long without being impressed by his splendid vitality, for he is tall and rugged like his native hills, and after listening to him for even a brief time one cannot but be inspired by his enthusiasm, an enthusiasm which is not of recent origin but one which possessed him at the beginning of his career and has grown to its present stupendous proportions with the development and realization of his ideals in medicine.

The purpose of the Institute is:

"1. To investigate diseases, before the occurrence of any structural change in any organ of the body, with the view of providing a diagnosis at a period earlier than is possible by the methods now in use.

2. To investigate minor symptoms and maladies which interfere with efficiency or comfort, with the object of determining

(a) the mechanism of their production;

(b) their bearing upon the future health of the patient.

3. To study the conditions under which the patient lives (food, work, surroundings, etc.).

4. To record all cases and keep in touch with the patients who have been seen, with the aim of discovering the relation between environment, ailments and subsequent disease.

5. To follow up patients in order to observe the outcome of complaints."

In this declaration of the objects of the Institute, one is impressed by the fact that nothing is said about the relief of suffering; emphasis is laid upon the prevention and cure of disease; nothing is said about the physical signs of disease; emphasis is placed upon the interpretation and symptoms long before physical signs are apparent.

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*Read before the Oshkosh Clinic, October, 1920.

The basic principle of the Institute is "that as disease is made manifest to us only by the symptoms it produces, it is imperative that the first step should be to understand the nature and significance of the symptoms."

Indeed it is perhaps because of its very simplicity that instructions along these lines have been very meager. Symptoms and their interpretation are too often given but scant consideration. Emphasis is placed on physical signs, efforts are made along lines of laboratory research, and treatment directed toward the repair and removal of damaged structure.

That this is true, one has but to observe the work that is done in our clinics and hospitals. Here well organized staffs, with a large number of more or less complex apparata and with various laboratories, are caring for patients in whom pathological conditions of a more or less serious nature exist. We look in vain, however, for institutions for the care of those patients in whom no physical sign is manifest, in whom there is no structural damage and while the prevention of such is possible. This is the purpose of St. Andrew's Institute. It plans to take care of men before pathological conditions arise; it purposes to train doctors to keenness in observation and carefulness in thought; it aims to direct medical students to the fact that, great as are the opportunities afforded by laboratories, there are phenomena which the scientific instruments of today can neither register nor measure; and further, that to investigate these phenomena there is required the use of the trained eye, the trained ear, the trained finger and the trained mind which no laboratory experience, however large, can supply.

The Institute picks its cases. Only those are taken who complain of a sense of ill health, a feeling that all is not well with them, a condition that may be due to their environment, to deficient nourishment, to the kind of work they perform, or other circumstances. The cases are chosen at the stage when there are no gross physical signs, for the structure of the organs has not been damaged and the usual mechanical aids to diagnosis cannot reveal them.

Several fundamental principles are required in this research:

1. The detection of symptoms, both subjective and objective. In the beginning of disease the first symptoms provoked are mainly subjective. By careful questioning these are to be drawn out as completely as possible, one symptom at a time, and all information possible elicited concerning it before taking up a second symptom. The objective symptoms are meanwhile to be closely observed and recorded.

2. The second principle is that a clear differentiation of the symptoms is to be made:

(a) On the basis of the mechanism of their production.

(b) On the bearing they have on the patients' future.

For example, a heart murmur may be differentiated according to the valve orifice at which it arises, but it is equally important that it be differentiated by the effects its cause has upon the functional efficiency of the heart.

3. The third fundamental is that of a proper classification of the symptoms. At present they are divided into three groups which will be modified and enlarged as this research continues.

(a) The structural group—those in which structure is involved and physical signs present.

(b) The functional group—those in which only the functions of the various organs of the body are involved.

(c) The reflex group—arising from a stimulation of the central nervous system.

4. The fourth fundamental is what is termed the law of progression. By this is meant that we are not to stop with the discovery of a new fact, but are to proceed to further discovery, using the new fact as a foothold to further advance.

5. The fifth fundamental is the law of Associated Phenomena. The search for other symptoms from the simplest complaints to the most obvious physical signs.

6. The sixth and last principle is the significance of symptoms. We are to study them carefully and find out the effect the cause of a symptom has on the patient's future.

Take, for example, that most common complaint —pain. How many of us interpret it correctly, give it its real value, assign it to its proper group? A patient comes to us with pain in his right side. We place our fingers on McBurney's point and the patient's "ouch" determines the treatment and he is sent to the operating table for an appendectomy. After a few weeks he returns to us with the same pain.

Many a man has been sent on the road to chronic invalidism by an uncalled for appendectomy be-

cause we did not properly consider the one symptom of which he complained. We have only to refer to the large number whose appendices have been removed and who still have the same or worse pain over the same area to realize how slipshod our consideration is of even the commonest of symptoms with which we daily come in contact.

Pain is to be considered in its origin, its character, its extension, its various localizations, in connection with its associated phenomena and with a recognition of its relation to the general nervous system and the probable effects on the patient's future.

The equipment for the pursuit of these objects is self-evident. It is essentially specially trained general practitioners; sufficient material for observation; and supplementary to these, the advantages of well equipped laboratories. These we find at St. Andrew's. This city of 10,000 was chosen as an ideal place for the establishment of the clinic because the inhabitants are non-migratory and may be observed and careful records kept of their condition for long periods of time.

A building has been purchased which is adequate for present requirements and is admirably arranged for its purpose. The laboratories are situated on the third floor and the first and second floors are divided so that each doctor has his own room.

Six general practitioners have entered upon the work and under the guidance of Sir James have taken hold of the problems presented with remarkable enthusiasm and in a manner that promises well for the future.

They are making careful records of their patients. The cases in which great structural damage is manifested are not considered; those whose only complaint is that of a general condition of not feeling well and of exhaustion are carefully questioned, their subjective sensations fully elicited and classified; all associated phenomena painstakingly tabulated, and thus day after day evidence is being accumulated that will enable them to ultimately diagnose disease before physical damage is done.

In addition to these general practitioners the staff is completed by the addition of the professors of anatomy, physiology and logic attached to the University of St. Andrew's. Once a week these men meet with Sir James McKenzie and their cases and symptoms are carefully considered and discussed.

Assisting these men in their work is a well equipped Roentgen laboratory, fine physiological and chemical laboratories, with others shortly to be established under the direction of skilled chemists and bacteriologists. These various laboratories, it is to be observed, are simply and always handmaids to the general practitioner. Here as nowhere else in the world they are subordinate to the observant eye, the hearing ear and the trained mind.

What has been accomplished?

In a colossal work of this kind it takes time to begin. It will be years before results materialize; but that successful achievement is inevitable is manifest in work now being done.

For example, take the simplest complaint with which we, the general practitioners, have to deal—that of exhaustion—what do we know about it? What have we tried to discover? For the most part nothing—our patient is tired—we will give him a tonic to brace him up.

Here they are working on this as one of the great problems—one of the earliest symptoms of disease. They have sought in patients complaining of this, these facts: What time of day was it felt? What relation to effort? What relation to meals? What relation to posture?

They have sought to analyze the subjective phenomena such as dizziness, sinking in Epigastrium, nausea, irritability of temper. They have tabulated the objective phenomena—such as blood pressure, ocular phenomena, pallor and blushing, sweating, tache cerebral, filling of veins in the neck on abdominal pressure.

They have found that there is one type of exhaustion which is absent in the morning and progresses steadily during the day, another which is at its worst in the morning and passes away at night, a third which has two maximum periods in the twelve hours. What is the significance of these? What different approaching diseases do they herald? As yet they do not know. Some day we shall be informed, and from the clinic's answer to this and other problems its power and value will be established.

I left St. Andrew's with the conviction that in a not far distant day the general practitioner will work along the line of St. Andrew's Institute, even under its direction, and that in the use of their methods he will prevent disease and make for the betterment of the race. He will, however, have to change his methods of study. Heretofore he

has depended upon the revelation furnished by the postmortem examination, and the pathology of the dead. Now he is to study the beginnings of disease in the living. He is not to neglect those in whom disease has shown itself in great structural change, and who are probably beyond cure, but he is to pay special attention to those others in whom no structural changes have taken place, to study them thoroughly, to watch them closely and to prevent disease from getting hold of them. He is, when necessary, to call the chemist, the radiologist, the bacteriologist, the nose and throat specialist, and the surgeon. It is to be observed that in the scheme of St. Andrew's Institute the general practioner is the chief investigator. It is his directing hand that is to classify and correlate the opinion of the specialist, it is his directing hand that is to reveal the beginnings of disease. To him at last has come the recognition of his proper place, the specialist of specialists.

BOTULISM.

During the latter part of 1919 numerous cases of poisoning, with a number of deaths, were reported in different parts of the country, as a result of eating olives, or certain canned vegetables. These deaths were caused by botulism—literally "sausage poisoning."

Botulism, according to a bulletin prepared by the Department of Medical Information of the League of Red Cross Societies, and made public by the American Red Cross, has in the past usually arisen from consumption of home-preserved food which was not correctly packed but events such as those noted above had led recent investigators to conclude that infection with botulism through commercially-packed foodstuffs, while rare, is by no means impossible.

The obvious method of protection against botulism, which has a high mortality, is to refrain from eating preserved foods which are noticeably spoiled. The presence of the Bacillus Botulinus is usually indicated by a sour odor, or by some other plain evidence that food containing it is unfit to be consumed. While the presence of the bacillus has been noted only in foods which have been prepared for preservation in cans, jars or other containers, ordinary prudence demands the rejection of any comestible which, by smell, taste or appearance, shows signs of being spoiled.

Bacillus botulinus was first isolated by van Ermengem in 1896. It is of the anaerobic type; that is, it cannot exist where oxygen is present. When taken into the human system, it lodges in the digestive tract, and the toxins produced there spread over the body. Inasmuch as the first symptoms of botulinus do not appear until it is too late to employ the stomach pump or emetics, and since the only treatment is a serum of doubtful value, the fight must be devoted mainly to keeping up the sufferer's strength and combating the various symptoms as they occur.

Botulism is somewhat similar, in its early symptoms, to encephalitis lethargica, a disease which is very much in the popular mind at present, and an epidemic of the latter disease in England in 1918 was wrongly diagnosed as botulism, supposedly due to the war diet of the people. The onset of both diseases is acute. The first noticeable symptoms are similar, and consist of dimness of sight, often followed by coma. But there the resemblance ends. Encephalitis produces a slight rise of temperature; botulism usually does not. There are rarely two cases of encephalitis in the same household, while botulism usually affects at the beginning several people, all of whom have partaken of infected food. Finally, death from botulism usually occurs within four days, accompanied by varying symptoms, while encephalitis tends to produce prolonged coma, and to become in a sense chronic.

Ptomain poisoning, which also may result from eating bad food, is not associated with the presence of the botulinus bacillus, but in the past, in the absence of exact methods of diagnosis, it often was confused with botulism. Figures for the United States show only 150 cases of botulism, with 97 deaths, in the whole history of the disease there.

Food containing the Bacillus Botulinus may be either animal or vegetable, and in many cases the death rate from eating poisoned vegetable products has been excessively high, due probably to the fact that preserved vegetables often are served raw, as in salad, while meats are more apt to be cooked, with a constant diminution of the virulence of the botulinus germ. German statistics of several epidemics show mortality in cases of consumption of infected vegetables to be as high as 5230/0, that from smoked meat and bacon being 190/0, from sausage being 170/0, from fish and lobsters only 100/0, the mortality tending to diminish in proportion to the probability of the food being cooked before consumption. A curious fact in relation to the epidemics of botulism arising from the eating of poisoned olives is that in cases when the olives had been washed before they were eaten, the disease appeared in milder form, or did not attack those persons who had taken the precaution to wash their olives.

The sterilizing methods adopted by the corporations which distribute preserved foods seem largely to eliminate the possibility of botulinus infection. It is usually in the cases of products of isolated unscrupulous packers, or where foods which have been rejected by the original consignees are sold at low prices in second-rate stores that there is danger of botulism. The bacilli of this disease may develop in home-preserved foods through insufficient sterilization of the food or of the container; or through the use of faulty methods of excluding air from the sealed container, thereby allowing putrefaction.

The great majority of the commercially prepared foods are absolutely safe when they leave the packing plants; but the public should insist on getting undamaged containers, since even the best of these receptacles may be

damaged by careless handling. The proportion of safety in tinned foods is shown strikingly by an experiment carried on at Harvard University, where a lunch club experimented over a period of 16 months with 1750 cans of food. Absolutely no ill effects were discovered as a result of this investigation.

The botulinus bacilli are not found in raw foodstuffs, or in products which have been correctly prepared. Observance of scrupulous care in preserving food for future consumption eliminates the possibility of the spreading of botulism, which, while it fortunately is not of frequent occurrence, nevertheless is one of those maladies with which medical science has not yet definitely learned to cope.

NEAR EAST RELIEF.

"Every physician should himself suffer from the diseases which he is treating. That's the only way he can come to an adequate appreciation of what he is trying to cure." So says Dr. Blanche Norton, Near East Relief worker just returned from Constantinople where she was singled out by the Greek government to be the first and only woman on whom they had ever conferred the decoration of the King George I, first class. This distinction came as the result of Dr. Norton's wonderful work in caring for the trachoma victims among the Greek refugees; and as may be guessed by her statement above, she not only cared for trachoma patients, but she contracted the disease herself and speaks with double authority on its causes and cure.

"Not that I can say a great deal about its causes," she said on her arrival in New York. "Beside the fact that it is extremely contagious, very little is known about its origin and contraction. The Orientals have suffered from it and other eye diseases for so long that they take very little interest in the matter. When the patient becomes almost blind they follow out a very misguided conception of isolation, and let it go at that.

"For instance, when I arrived in Kerrasunde, a little town on the Black Sea, I found that nearly a hundred little children were 'isolated' in a cold dark cellar, with no occupation, with almost no care and very inadequate food and clothing. Many of them were blind; all of them were sick and weak. Yet most of these children might have been cured had they received the proper treatment in time.

"The same mode of treatment, with the exception of the shortage of food and clothing, is what has always been given the victims of this disease. It is no wonder, then, that fully a fourth of the population of the Near East are afflicted, and that sore eyes are so common a sight on the streets of an Oriental town, that they cease to attract notice. In Constantinople we made a very careful survey of all the orphanages there—institutions which had been very efficiently run and where the refugee children of the Armenian and Greek massacres received the greatest care. We found here that exactly twenty-five per cent of them were suffering from trachoma. That the percentage among the outside population, particularly the refugees who throng the streets of the Eastern capitol, is much greater would be safe to say.

"It will be up to American scientific medical research to discover the origin and cure of this terrible disease," said Dr. Norton. "While the Greek physicians are heartily in sympathy with us and aided us in every way and proved most capable, the impetus must come from American physicians. That it is a field in which they may well be interested, I am sure, for it is not only in the Levant that trachoma is making such headway, but in our own country as well. In New York and many of our large cities the foreign quarters are filled with the disease and it is becoming more and more prevalent in our Southland.

"It is a most distressing and disastrous disease to have, I can say that for it. While one suffers less with it than with many its effects are very painful. Extreme nervousness and debility are among the first symptoms. The continued strain caused by dimmed vision is more than annoying. Finally its tendency in the large majority of cases to bring blindness marks it as superlatively dangerous."

Dr. Norton expects to devote herself for the next few years to research work in connection with this disease and its cure. Her own experiences should prove invaluable if there is any foundation in her initial statement that the physician should first suffer from the disease he is treating.

OPENINGS FOR DIETITIANS.

Opportunities are now open in the hospitals of the U. S. Public Health Service for the employment as dietitians of many women graduates of schools of Household Economics who have had student training or hospital experience in civilian or Army hospitals. The work, which has to do with the victualing of the hospitals, was transferred a year ago from the pharmacists to a newly established dietitian service. The section has steadily expanded, but owing to the opening of many new hospitals and the enlargement of those already in operation the dietic personnel is as yet not nearly up to the requirements. Applications for appointment should be made to the Surgeon General, U. S. Public Health Service, Washington, D. C.

NEW PUBLIC HEALTH SERVICE FILM.

A new motion picture film prepared at the instance of the U. S. Public Health Service vividly presents the life history of the mosquito, especially of the kind that transmits malaria germs and costs the United States people about $200,000 a year by so doing. Part of the film is "animated" and part taken from actual life; all of it is lifelike.

Most realistic are the views showing how the female mosquito absorbs the malaria germs with the blood of a malaria patient; how the germs increase and multiply and pervade the salivary glands of the mosquito; and how the mosquito passes them on to the nearest innocent bystander, who promptly falls ill with the disease.

The film was exhibited for the first time at the meeting of the Southern Medical Association at Louisville, Kentucky, November 15 to 18.

THE WISCONSIN MEDICAL JOURNAL
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EDITORIALS

PAY YOUR DUES!!

YOUR 1921 dues were payable during the month of January. If you have failed to remit these to your county secretary, the constitution and by-laws provides that you stand automatically suspended from membership until reinstated by payment of same.

This means that your medical defense is not active for any mal-practice suit which may be instituted against you during your period of delinquency.

Pay your dues today!

MEDICAL LEGISLATION.

AT the annual meeting of the Council of the State Medical Society, held in Milwaukee, January 10, the entire afternoon was given over to a discussion of the problem of legislation influencing the practice of medicine and public health which may come up during the present session of the state legislature.

The efforts of the medical profession and the State Medical Society to influence legislation in the past were carefully reviewed. Those who have borne the brunt of this work were present and related how, year after year, in appearing for or against a bill the suspicions of the members of our legislature were immediately aroused, they believing, of course, no body of men would take the trouble to come to Madison on legislative matters without an "axe to grind."

It was generally agreed by the Council that the best way to pass a bill is for the medical profession to appear opposing it. The Ohio plan of placing the responsibility squarely on the shoulders of the legislators rather than assuming it as a profession was discussed and believed to be more productive of results than any other. It has proven so in other states.

Laws are passed to protect the public and not to protect any class or body of men. If, then, a medical practice act exists to protect the public from being victimized by sharks and charlatans, the responsibility for the medical practice act is on the legislature and not on the profession. If public health laws are passed to protect the people of Wisconsin from the ravages of disease and epidemics, such laws are enacted for the benefit of the people and not for the benefit of the medical profession, and the responsibility for their enactment should be placed squarely where it belongs —on the men who frame our laws.

It was thought best by the members of the Council to so inform the state legislature, to tell them that the responsibility for medical and public health legislation is theirs, not ours; that we will not be humiliated by being forced to lobby for legislation which is not in our interests, which they so frequently charge, but is in the interests of the people of this great State, and that we will not place quacks, cults and charlatans in the rôle of persecuted martyrs by attempting to influence legislation which may affect them.

The meeting passed the following resolution before adjournment:

"Whereas, The responsibility for the enactment, amendment or repeal of laws affecting the health of the citizens of the State of Wisconsin and the educational and practical fitness of those licensed to practice the art of healing, rests solely with the State Legislature: *therefore be it*

"Resolved, By the Council of the State Medical Society of Wisconsin, in session in the City of Milwaukee on this tenth day of January, 1921, that the State Medical Society of Wisconsin, as an organization, will not advocate the framing of new laws, the amendment of or the repeal of existing statutes affecting the health of the citizens of the State of Wisconsin, or the educational or practical fitness of those licensed to practice the art of healing; *be it further*

"Resolved, That the State Medical Society of Wisconsin will, through its officers, its Council, or its Committee on Public Policy and Legislation, on the request therefor, aid and assist by all means in its power the State Legislature, or any civic organization, in the obtaining of information necessary to the proper and just framing of any new statutes, or the amendment or repeal of existing statutes; *be it further*

"Resolved, That the Secretary of the State Medical Society of Wisconsin be instructed to send copies of these resolutions to the presiding officer of the Senate and of the Assembly of the State Legislature."

The policy of the State Medical Society during this session of the legislature will then be that the organized profession of the State of Wisconsin holds itself ready to be of any assistance it can in the framing of medical or public health legislation but that it will introduce no legislation nor will it as a society oppose any.

HOW DO WE OBTAIN NEWS ITEMS?

MANY readers of the Journal undoubtedly scan the news item column to learn what has occurred in their county among medical men and women and are often disappointed in not finding mention of news they expected to find. It would be natural to charge up such omissions to the remissness of the editor in not having noted events associated with affairs in their county. We wonder how many such readers have ever stopped to wonder how an editor obtains news items.

Let us remind you that the only source of information we have is you members who are interested enough in your Journal to send in such items, and the services of a clipping agency which sends to us each month clippings of medical affairs which they may happen to see in different newspapers published in the State.

We are anxious to have the medical news of the State for publication each month in the Journal, but this can not be complete unless the general membership takes an interest and sends in the items. Marriages, deaths, removal of physicians from one address to another, election of officers to county societies, the reports of county society meetings, are items which should be forwarded promptly.

It is up to each of you to be a news-gatherer if you expect to receive a notice of current medical events in your section. Members of the Society should not forget that the Journal is the official organ of the State Society and that each member owns as much of the Journal as does the editor. They should not fail to remember that what they get out of the Journal is what they put into it. It is surprising how little assistance we receive from members of the Society. This, then, is an appeal to each and every member to take a lively interest in your own medical journal. Remember —it is trying to help solve your problems. Read each copy carefully and if you have something for the next or succeeding issues, don't fail to send it in at once. We want you to serve, and we want you to help us serve.

"CHIROPRACTIC."

A PENNSYLVANIA physician sends us some advertising leaflets issued by a "chiropractor" in his vicinity. The leaflet is one of those that are printed by the hundred thousand and sold to individual chiropractors, having the purchaser's name printed on the leaflet to give a personal touch. Our correspondent comments:

I am enclosing an example of the flagrant nonsense which the public is being handed and is accepting. The man whose name is printed on this circular as the chiropractor was a schoolmate of mine. He finished his education in the grammar school, while I kept on, not earning a penny until I became twenty-four years of age.

On the day I left my home and office in July, 1917, for the Army this man, who is now a "chiropractor," was perched on a ladder across the street painting a

house. Six months later, in camp, I received my home newspaper containing his noisy advertisement. He had acquired the prefix "Dr." and was flourishing. At the present time he boasts of two offices, a flourishing "practice" and an automobile. In my home town of 50,000, five more chiropractors have established offices within the past three years and are doing business.

We are not sure that any comment is necessary; the letter is an editorial in itself. However, it may be worth while to point out that the profession that is devoted to the relief and cure of human ailments is the only one that will permit men without technical knowledge to ply their vocation with impunity—provided these ignoramuses speciously plead that they are representatives of a new "school" of healing. It is not conceivable that a man whose only training was a six months' correspondence course would be put in charge of a locomotive. It is equally inconceivable that a man with a few weeks' reading of law would be admitted to the bar and entrusted with cases that might involve large financial interests. But a street cleaner or a garbage collector can take a six months' "course" in "chiropractic" and be permitted by the commonwealth to hold himself out as competent to treat the most complicated piece of mechanism known—the human body.—*Jour. A. M. A.*, Jan. 15, 1921.

DEATHS OF PHYSICIANS IN 1920.

DURING 1920, the deaths of 2,321 physicians in the United States and Canada were recorded in THE JOURNAL. Adding 2.5 per cent to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths as 2,379. On an estimate of 160,000 physicians, in the United States and Canada, this is equivalent to an annual death rate of 14.81 per thousand. For the eighteen previous years the mortality rates were: 1919, 13.55; 1918, 16.88; 1917, 14.37; 1916, 14.08; 1915, 15.71; 1914, 14.41; 1913, 14.64; 1912, 14.13; 1911, 15.32; 1910, 16.96; 1909, 16.26; 1908, 17.39; 1907, 16.01; 1906, 17.20; 1905, 16.36; 1904, 17.14; 1903, 13.73, and 1902, 14.74. The average annual mortality rate for the period from 1902 to 1920, inclusive, was, therefore, 15.46 per thousand.

Ages.—Of the 2,272 decedents whose age was stated, 37 were under 30; 174 between 31 and 40; 351 between 41 and 50; 463 between 51 and 60; 541 between 61 and 70; 436 between 71 and 80; 208 between 81 and 90, and 19 between 91 and 100. The greatest number of deaths for a given age occurred at 63 and 64 years, at each of which ages sixty-five deaths were noted.

Causes of Death.—General diseases accounted for 257 deaths; diseases of the nervous system, 271; diseases of the circulatory system, 404; diseases of the respiratory system, 266; diseases of the digestive system, 70; diseases of the genito-urinary system, 154; senility, 77; suicide, 32; accidents, 102; homicide, 14, and sequels of surgical operations, 74. The principal assigned causes of death from disease and their frequency were: organic heart disease, 236; cerebral hemorrhage, 211; pneumonia, 186; nephritis and uremia, 142; malignant tumors, 91; tuberculosis, 59; angina pectoris, 50; pneumonia-influenza, 37; arterio-sclerosis, 33; myocarditis, 34; septicemia, 31; influenza, 29; diabetes, 28; meningitis, 17; cirrhosis of the liver and acute dilatation of the heart, each 16; endocarditis and anemia, each 15; peritonitis, 12, and appendicitis and gastritis, each 11.

Accident.—The causes and distribution of the 102 deaths from accident were: automobile, 27; automobile-railway (grade crossing), 22; poisons, 9; falls, 8; firearms, 7; drowning, 6; railway and street car, each, 5; asphyxia, 3; exposure and burns, each, 2; crushing, 1, and other accidents, 5. The thirty-two physicians who ended their lives by suicide selected these methods: firearms, 18; poisons, 7; cutting instruments, 3; strangulation, 2; jumping from high places and drowning, each 1. Of the fourteen homicides, nine were due to firearms.

Civil Positions.—Of those who died, 1 had been a member of Congress; 1, consul; 1, a state governor; 13, members of state senates; 19, members of the lower houses of legislatures, and 25 had been mayors; 17, members of state boards of health; 24, members of state boards of medical examiners; 4, members of other state boards, and 1, a member of the National Board of Medical Examiners.

Association Fellowship—Of the 520 Fellows of the American Medical Association who died during 1920, one had been President; four, Vice President; seven, members of the House of Delegates; one, a member of the Council on Medical Education, and four, section officers.—*Jour. A. M. A.*, Jan. 1, 1921.

HOW TO MEASURE THE EFFICIENCY OF LOCAL HEALTH OFFICERS.

THE value of a person to society is largely measured by his ability to discharge efficiently his professional obligations. For instance, the chief of a police department is evaluated by his ability not only to bring lawbreakers to the bar of justice but also to prevent crime. Some of the most successful guardians of the law seldom make an arrest, but gain their ends through educational efforts which serve to prevent wrongdoing. Somewhat similarly the worth of a fire chief is judged by his ability to prevent conflagrations as well as to extinguish as speedily as possible those which do occur.

The local health officer is likewise judged by the results attained, not alone in combating promptly, courageously, and effectively the disease epidemics which arise, but more particularly in preventing such outbreaks. In measuring the effects of health administration difficulty is encountered; for it appears to be much simpler to tally the cases of sickness and death than to determine the number of persons who were spared such affliction. This difficulty is particularly obvious in the campaign against venereal diseases. Actual reported cases of venereal diseases are tangible. However, there is no way at present of knowing how many persons are deterred through educational effort from acquiring venereal diseases. Until a practical system of measuring these efforts can be devised, the full effect of this work will neither be adequately appreciated nor whole-heartedly supported.

What has been said of one vital branch of public health administration, namely, venereal disease control, applies with equal emphasis to the general problem. However, if genuine progress is to be made in public health work, some method, even though productive of only approximately satisfactory results, must be devised for gauging the results achieved by local health officers. Such a system of appraisement is as necessary to an efficient civic administration as a system of financial accounting. The community employing the health officer has a definite right to know whether he is accomplishing results. Even more important, a system of self-examination enables the health officer himself to ascertain what beneficial results to the community accompany his efforts. A consideration of the local health officer problem in Wisconsin affords ample justification for suggesting a system of efficiency evaluation.

There are at present in the State of Wisconsin 1,740 cities, villages and townships for which local health officers are legally required. One hundred and forty-three, or 8.2 per cent, of the aggregate are cities; 320, or 18.4 per cent, are villages; and 1,277, or 73.4 per cent, are townships. It will be noted that nearly three-fourths of the localities having health officers are essentially rural in character, whereas the remaining one-fourth are urban in character. This analysis clearly indicates the especial desirability of improving and strengthening health administration in rural districts.

A further examination of the health officer situation in Wisconsin shows that 1,695, or 97.4 per cent, of the 1,740 health jurisdictions have organized boards of health and designated health officers, leaving only 45, or 2.6 per cent, of the entire number without legal health machinery. As steady pressure continues to be exerted upon the delinquent localities it is believed that a 100 per cent State health organization will soon be a reality. In presenting these figures it is realized that many local health organizations exist on paper only, and that in so far as activities are concerned, a veil should be charitably drawn. However, even so inadequate a condition marks a distinct advance.

A still further analysis of the personnel occupying the 1,695 local health officerships shows that 892, or 52.6 per cent, are physicians, while 803, or 47.4 per cent, are laymen. Four of the physicians and three of the lay health officers are women. Any system of education in health administration or appraisal of health effort in Wisconsin must therefore take into consideration the fact that approximately one-half of the officials are laymen. Further allowance must be made for the fact that but 9, or only 0.5 per cent, are whole-time officials, whereas 99.5 per cent, or 1,686, serve only part of the time.

Briefly and broadly stated, it is the business of the health officer to administer the affairs of his office so that the human beings in his jurisdiction may live comfortably and happily, harassed as little as possible by unnecessary sickness and suffering, and likewise spared premature death. That only an approximate degree of perfection in this respect can be obtained, is obvious. Nevertheless,

it should constitute the ideal which every health officer with a conscience should strive to attain. When a health officer does nothing, the people in the community erroneously jump to the conclusion that there is nothing to be done. Consequently, nothing is done. In the presence of such an attitude, unnecessary sickness and death are inevitable.

It is unfortunate that health officers are invariably underpaid. This glaring inadequacy is one which must soon be studied intensively, and efforts must be put forth for the correction of the existing evils. However, mere inadequacy of salary can not be offered as an excuse to condone the failure to afford reasonable health protection. The conservation of human life, especially child life, is a trust too sacred to be subordinated to quibbling over salary matters. Once a person has accepted the position of local health officer or taken the oath of office, he is in honor bound to give the best service of which he is capable. If he considers himself worth $500 or $5,000 a year, but receives but $50 a year, he can not either in justice to the people or in common decency afford to compromise on $50 worth of service.

How, then, can we estimate the value of local health officers and at the same time provide a mirror in which these officials may see themselves and, viewing themselves, judge of the adequacy of their efforts? Most simple of measuring devices is the score card, familiar to everyone through its application to the determination of sanitary conditions in dairies, dairy farms, restaurants, and the like. It is believed that the ordinary score card, with some modifications, will prove particularly useful as a means of measuring the efficiency of local health officers. Moreover, it is believed that the scoring of these officials in the manner indicated will result in an awakening which will immediately be reflected in an improvement of the public health.

The standard scoring form consists of two headings, (1) Methods, and (2) Equipment, beneath which are considered the various factors entering into the appraisal of the subject under consideration. Adjoining columns are provided for perfect and allowed scores. Attention is directed to the fact that in the score card for the health officer the activities are arranged in order of importance; those judged to be most essential are allowed the highest scores, while the lowest are considered least important and therefore are allotted the smallest scores. No comment will be made as to the relative merits of the items listed, for these are generally appreciated and understood. Incidentally, however, the bearing of several of the listed health activities upon the general administrative plan will be amplified in an attempt to justify their inclusion.

(The above editorial was written by Robert Olsen, U. S. P. H. S., with the Wisconsin State Board of Health.)

THE JOURNAL CLINIC

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CLINIC OF R. C. BLANKINSHIP, M. D.

The symptom complex in the following case report is common to a large variety of pathological conditions. There are certain features given in the history and encountered in the course of study which make the case worthy of presentation.

The patient was referred to us for examination on September 1, 1920.

Mr. L. W., age 34, married, U. S. farmer.

C. C. "Bladder trouble."

H. P. I. Onset was gradual. About one year ago patient first noticed slight frequency of urination which after a few weeks amounted to 10 or 12 times daily. A certain amount of pain and burning has been noticed even from the start, and at times there has been some dribbling after voiding. After three months, a few drops of bright red blood were noticed in an occasional urine specimen. This usually appeared at the end of the act. At the end of six months he began to get up once or twice nightly to void. This has continued the same up to the present time. The patient does not believe that the total daily quantity of urine is excessive. There has been some aching pain and a sense of heaviness in the lower lumbar region (bilateral) since the onset. No loss of weight, appetite good, bowels regular. No coughing; not subject to frequent colds.

P. M. H. Measles, mumps, and chicken pox in childhood. Ten years ago had a small lump in the right epididymis incised because of the enlargement and not for the relief of symptoms.

Five years ago was operated for a small tumor in the right inguinal region. Influenza, very light, two years ago. Denies venereal infection. Never used alcoholic drinks to excess.

F. H. F. and M., L and W. One brother and one sister L. and W. One brother died pulmonary Tbc. age 26. The patient lived in the same house with this brother until five years previous to his death.

Physical Examination: Well developed and well nourished male. Appears to be in good health.

Skin: Smooth and moist. Scar at site of operation right inguinal region. A few later cervical glands slightly enlarged.

Mucous membranes: Of normal color.

Hair and scalp: Normal.

Pupils: Equal; both react to light and distance.

Ears: Negative.

Nose: Septal deviation, moderate low anterior obstruction on the right.

Mouth: Teeth, many fillings and two crowns. No evidence of pyorrhea.

Thyroid: No enlargement.

Heart: Normal size and position, no murmurs or thrills—A_2, P_2, not notable. Artery walls soft and elastic.

Blood pressure: Systolic 110; diastolic 72.

Lungs: Expansion slightly restricted both apices. Tactile fremitus increased on the left posteriorly. No appreciable change in percussion note. Cogwheel breathing, left side posteriorly from the spine to the lower angle of the scapula. No rales heard.

Abdomen: Negative.

Genitalia: Normal.

Reflexes: Active.

Rectal examination: Prostata smooth, normal consistency, size and shape.

Laboratory Reports:

Urine:	Color, straw.	Microscopic
	Sp. Grav., 1,020.	W. B. C.
	Reac., Acid.	
	Sugar, Neg.	
	Albumen.	
Blood:	Hb., 93.	
	Eryth., 4,900,000.	
	Leuc., 9,600.	
	Dif., P. 83; L. 14; T. 3.	

X-rays:

Thorax: Fibrous lesion of each apex, probably old Tuberculosis. Area of parenchymal involvement of left posterior 2nd. Interspace subscapular.

Dental: Negative for evidence of periapical involvement.

Blood: Wassermann, negative. Total non protein nitrogen of the blood, 36 mg. per 100 cc. Creatininol .5 mg. per 100 cc.

Cystoscopic examination. The patient was referred to a local surgeon for examination of the bladder and catheterization of the ureters. The following report was given:

First Examination: "Unable to introduce a sound larger than 22 F. Resistance believed to be a stricture encountered in posterior part of pendulous urethra. Believe it wise to institute gradual dilation of urethra by the passage of sounds."

Second Report—two days later: "In the bladder: Evidence of chronic cystitis, left ureter catheterized normally. Phthalin output (first appearance six minutes) normal. No pus or blood from this side. About right ureteral orifice there are multiple ulcers. Unable to enter right ureter for a distance of more than 2½ inches. No urine recovered from this side."

Laboratory examination of direct smears of sedimented bladder urine showed the presence of numerous tubercle bacilli. Nephrectomy (right) was performed three days after the second cystoscopic examination. The kidney was found to be almost twice the normal size. The cortex was studded with patches of tubercles. The incised kidney showed numerous gross tuberculous abscesses of varying size. Apparently no functionating tissue remained in this kidney.

The patient made a prompt and uneventful recovery.

TWO CASES OF ASTHMA.

CLINIC OF H. P. GREELEY, M. D.,

MADISON.

CASE I. Girl, age six, white, American.

Family History: Negative for asthma or hay fever. Both parents living and well. One brother, age 8, well.

Past History: Well as a baby. Free from digestive disturbances and eczema. No contagious diseases except varicella. Not particularly liable to colds and sore throats.

Habits: Exemplary. A very carefully brought up child. Bowels regular. Appetite good.

Present Illness: Dates back two years when she first began having asthmatic attacks at night. She has obtained no relief except through burning some "patent cure" every night. Had a free interval of several weeks when up north in the summer.

Physical Examination: Shows a plump rosy-cheeked child in apparent good health. Nasal mucous membrane slightly congested. Tonsils not enlarged or inflamed. Teeth in perfect condition. Palatal arch well developed and not high and narrow. No enlarged lymph nodes in neck or axillae. Heart and lungs negative. She presents no wheezing during the day. Abdomen negative. Blood and urine negative.

DISCUSSION.

Here we have a child free from any physical evidence that might lead to asthma. There is apparently no focus of infection that could cause the condition. It is not seasonal so we can rule out all plant pollens. There were no pet animals in the house so that it was easy to rule out emanations of cat hair or dog hair or horse dander as causal agents.

The question of food proteins was more difficult to rule out but the fact that the asthma was continuous and yet she was free from it up north did not point to food. For, if any, it must be a common food, in which case she ate it up north as well as in Madison. However, she was tested for sensitiveness to the common foods—cereals, milk, eggs, grains, etc., to all of which she was negative by the skin test.

After more careful inquiry, it was discovered that something over two years before, her grandmother had given her a goose-feather pillow. This was promptly removed and the asthma completely disappeared. It has returned only two or three times since, when she has spent a day or two at her uncle's farm where there were geese, chickens and ducks in the yard.

No question of immunization need be considered here because the cause is one which is so easily removable.

Case II. Boy, age six years, seen first in April, 1918. Family History: Father living and well. One sister, age 2, living and well. Mother suffered from autumnal hay-fever which at the height of the "season" develops into asthma.

Past History: Catches cold easily. Stomach rather easily upset. Has frequent attacks of vomiting followed by bronchitis. No contagious diseases.

Habits: Regular bowels. Plenty of sleep and fresh air. Appetite often poor and finicky. There are lots of food he won't eat.

Present Illness: Began several years ago. It takes the form of periodic attacks of vomiting, followed by high fever, severe cough and typical asthmatic wheezing respiration. The attacks come on rather suddenly and last from four days to a week or more. His mother is discouraged because she has done everything to prevent his catching cold and yet the attacks continue.

Physical Examination: Shows a frail, delicate-looking thin child, 8 pounds underweight and about one inch under size (height). Nose—deflected septum and enlarged turbinate, resulting in a very narrow breathing apparatus. Palatal arch high and narrow. Tonsils—large and apparently much inflamed. Teeth — irregular, crowded, but in good condition. Chest—rather long and flat. Heart and lungs negative. Abdomen negative. Blood and urine negative.

DISCUSSION.

Here we have a case with many factors of importance. A positive familial history of seasonal asthma; inflamed tonsils. Poor nasal architecture and faulty development of palatal arch. The possibility of food idiosyncrasy. Because of the association of vomiting with the asthmatic attacks, foods were investigated first. The boy gave a very positive skin test to egg-white. Other foods were negative. Eggs were immediately removed from the diet in every form. He was not even permitted any foods which contained any egg. Asthmatic attacks ceased, but have recurred occasionally when nougat candy or cookies have been eaten away from home.

Further treatment of this boy has included tonsilectomy, spreading of his jaw and straightening of his teeth. His mother preferred not to attempt immunization until the result of these measures was known. After a year, no outgrowing of the condition resulted. Therefore, immunization with increasing doses of egg-white, starting with one-tenth of a milligram three times a day, is being carried out successfully.

CLINIC OF HENRY B. HITZ, M. D., MILWAUKEE.

Two interesting cases from a diagnostic standpoint have recently been brought to my attention. Both individuals were suffering from serious laryngeal stenosis. The appearance of the larynx in each was practically identical, and consisted of pedunculated flesh colored masses, almost entirely filling the glottic chink, leaving a small place for respiration; and in both cases the individuals were suffering from some cyanosis. Both of the individuals had been in the hands of other practitioners and had had Wassermanns made,

which were negative and, in both cases also, the sputum examination failed to show any positive signs.

The first case, that of a man 44 years of age, molder by trade, had lost his voice six weeks before; gave no history of any preceding condition that would throw any light upon this laryngeal disease, was married and had some well grown children. No pain in the larynx or throat existed prior to, or accompanying the loss of voice, and there was no history of fever, chills or physical disturbance that would interfere with his duties. From the time of the onset of the loss of voice, he had obtained a clinical thermometer, and had taken his own temperature morning and evening, and stated that it was invariably normal. He did however, show on examination of his throat, a scar in the region of his right tonsil, and several small stelate scars on the tip of the epiglottis. He claimed that he had never been under medical treatment, but had remembered, when he was a child of four years, that he had had a serious diphtheritic throat. His chest was examined in the office, and while there were small areas of slight dulness evident, it seemed apparent that there was no active lesion in the chest nor was there any glandular infiltration in the neck. He was sent to the Milwaukee Hospital, and by means of the Lynch Suspension apparatus, a number of large pedunculated fleshy masses were removed from the ventricular bands, and the anterior commissure of the larynx. There were no ulcerative lesions in the larynx, at the time, and the interarytenoid space and the arytenoids themselves were apparently normal. This operation relieved his laryngeal stenosis and the next day stereoscopic plates were made of his chest. These showed beyond a doubt, extensive tubercular infiltration, very general, but most pronounced along the central line. Report from the laboratory showed the masses removed from the larynx to be tuberculomata, giving an excellent view of giant celled formation with tubercular bacilli in situ.

The second case was that of a young man 30 years of age, ice man, married, presenting almost identically the same clinical phenomena in the larynx, excepting the presence of any scars, such as noted above. His Wassermann was also negative, as was his sputum and chest. Inasmuch as his breathing was seriously impaired, he was removed to the hospital and the larynx cleaned out by means of the Lynch Suspension apparatus. The masses removed from the larynx were apparently identical in character to those removed in the preceding case, and were taken from the ventricular bands, and the anterior commissure. His chest was the next day submitted to X-ray, but proved negative. Pathological report received the following day showed the masses in this case to be carcinoma.

Both of these cases showed rapid re-infiltration of the larynx, and both were submitted about four days later to tracheotomy.

The cases are presented from a purely diagnostic standpoint, because of their peculiarly identical appearances and apparent symptomatology.

A FIBROID OF UNUSUAL SIZE.

FROM THE CLINIC OF EUGENE E. TUPPER, M. D., SACRED HEART HOSPITAL, EAU CLAIRE, WIS.

I report this case because of the unusual size of the tumor, and because it was a little suggestive of a pregnancy.

The patient was a woman forty-five years of age, rather stoutly built, and had always enjoyed good health. Her family history was negative. She began menstruating at the age of fourteen, and has always been regular. In the beginning she flowed three days, but that has been increased to five or six days in the past two years. The flow has been free, but not excessive. There was no metrorrhagia and no pain with her periods. She had not missed a single period. Has been married 15 years, and was never pregnant.

In June, 1920, she experienced a sharp pain in the left lower quadrant of her abdomen. It made such an impression on her that she went into the field to tell her husband. From this time on she experienced sharp pains almost daily in this region, lasting only a few seconds. Later she noticed her abdomen was increasing in size. In October she went to her physician and was told she had a tumor, and that it ought to be removed. Her health had not been impaired in any way, and she had been able to do her usual work. Her physician brought her to me for operation. Besides a simple goiter, the physical examination was negative, except as follows:

I found a tumor in the abdomen corresponding

in size to a seven months' pregnancy. The tumor was rather irregular in outline, and a round, hard, movable mass could be felt deep in the pelvis. A vaginal examination revealed a symmetrical enlargement of the lower uterine segment, obliterating the cervix except for a half inch. The mass was movable, and the remaining cervix was soft. The patient was then placed in a Trendelenburg position, and examined bimanually. The mass deep in the pelvis could then be pushed up out of the lower pelvis, and a soft cervix of normal length presented to the examining fingers in the vagina. This was interpreted as a little suggestive of pregnancy. But all other symptoms of pregnancy were lacking. An X-ray examination showed no foetal skeleton.

Having in mind the experience of another surgeon, who, after several days study of a case, decided to operate, and found a normal pregnancy, I advised waiting six weeks, when we would operate, doing a hysterectomy or Caesarean section, as the case might be. This advice was followed.

On December 7, she was prepared for operation, and after relaxation under the anaesthetic, I could feel a couple of small nodules on one side of the tumor which gave definite evidence of a fibroid uterus. The abdomen was opened and this large fibroid tumor was found free from any attachments to the viscera. It was delivered through the long incision, and a supravaginal hysterectomy was performed. This did not prove as difficult as one might expect from the enormous size of the tumor.

The tumor weighed eight and a quarter pounds, measured twenty-one centimeters transversely, twenty-three centimeters in length, and thirteen centimeters thick. It was somewhat triangular in shape. Dr. M. King, the pathologist, reported that it was a multiple fibroid of the uterus.

The patient made an uneventful recovery, and left the hospital December 24.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY.

December Meeting.

REPORTED BY DR. WM. S. MIDDLETON.

Polycythemia — Dr. H. E. Marsh, Madison: First separated this condition into its true and false types, the latter resulting from chronic valvular conditions, diarrhoea and tuberculosis of the spleen. He emphasized the importance of recognizing the peculiar blue-red erythrosis which characterized 75 per cent of the cases of true polycythemia or Vaquez's disease. After discussing the theories of etiology, symptomatology was taken up. The irregular nervous manifestations were named as frequent solitary complaints. Even though all coagulation factors be normal, hemorrhages are not uncommon and relief from symptoms may attend such loss of blood. Splenic enlargement is common. Retinal veins may be engorged. Urine may show pus and blood cells or casts. The red cells may number 15,000,000 and variations occur independent of treatment. Hemoglobin readings up to 250 have been made. Coagulation and bleeding time are usually normal. Oxygen unsaturation is below normal. Fifty per cent show normal fragility and in 50 per cent there is increased fragility. The total blood volume is increased and metabolism ranges about plus 25. The pathology is that of general circulatory engorgement, with reversion in the bone marrow to embryonic forms. In the treatment, X-ray, bleeding and splenectomy have been used with variable results. Benzol and potassium iodide have been administered. Benzol combined with radium gives best promise, while venesection repeated may give improvement.

Discussion was opened by Dr. Bunting and continued by Drs. Loevenhart, Meek and Fahr.

Physiotherapy in Military Hospitals—Dr. J. C. Elsom, University of Wisconsin: In a very interesting and instructive talk illustrated by slides, Dr. Elsom showed the advances in the various phases of this subject as developed by the experiences of war. He emphasized the fact that virtually all of these measures had as their purpose the maintenance of muscular tone or its restoration. Furthermore, he developed the proposition of the psychology of the wounded, dwelling on their inherent good cheer and the necessity for mental and physical diversions, which was supplied by very ingenious games, etc. In all possible instances, the personal element of cooperation was encouraged in the men. The end results pictured were remarkable commentaries on the patience of the workers in this field and on the courage of the subjects.

Discussion was opened by Dr. Gilbert B. Seaman, Milwaukee.

January Meeting, Jan. 5, 1921.

Immune Sera and Some Biologic Problems—Prof. M. F. Guyer, University of Wisconsin: In introduction, Prof. Guyer suggested that immune bodies might have the same origin as endocrine substances and told how the possibility of attacking the problem of distortion of development had presented itself in this light. The pioneer work of Bordet on cytolysis was cited. In considering a line of attack by reason of the absence of other complicating factors, the crystalline lens was chosen a suitable agent against which to develop antibodies. In nature a rule prevails that where sufficient chemical identity exists between antecedent and the succeeding product, an influence on the former is felt in the latter. The problem therefore resolved itself into an effort to influence the young through the germ element of the adult. The various theories of hereditary transmission were discussed. Then the experiments with lens pulp were outlined. Rabbit lens pulp suspended in normal saline and filtered was injected into the peritoneal cavity of a fowl twice a week for varying periods. Injection of the sensitized fowl serum into adult rabbits showed no effect. If injected into a pregnant female, however, cleft iris (coloboma), persistence of the hyaloid artery, clouding of the lens and microphthalmia may result. The results were most constant when injections of the sensitized fowl serum were made on the 10th day of pregnancy, at which time the vascularity of the lens and development of the eye are most active. So far this defect in the visual apparatus has been carried through eight generations. Strangely, atrophy of the eyeball in affected strains has occurred as late as nine months after birth. To control these experiments, rabbits were injected with testicular substance, normal fowl serum and large doses of foreign sera without effect on the lens. To eliminate placental transmission the male of a defective strain was used. At first, results were negative and then through a Medelian recessive the defective strain reappeared. In other words a specific breaking in on a germ line has been produced. Carried further, female rabbits sensitized against rabbit lens pulp and mated, gave young with eye defects — antibodies against their own tissues. Parallel experiments on spermatoxins have been performed; and in rabbits so sterilized although the germinal epithelium was intact, mobility and power of fertilization was lost to the spermatozoa. Carried further to immune sera, it was proven that the young of rabbits treated with typhoid vaccine developed as high or higher titer of agglutinins than did the mother. This power of agglutination has been carried to the second generation. Suckling young of an untreated group transferred to a sensitized female developed a positive Widal reaction, but lost it when taken from the sensitized adult.

This paper was discussed by Drs. Loevenhart, Bunting, Jackson and Lorenz.

LEUKANEMIA.

Leukanemia, according to Douglas Symmers, New York (*Journal A. M. A.*, Jan. 15, 1921), is characterized clinically by an extremely rapid course and by changes in the blood, bone marrow, spleen, liver and lymph nodes that partake both of the nature of pernicious anemia and myelogenous leukemia, the causative agent acting on the hematogenic centers of the bone marrow in such fashion as to produce marked numerical increase in those primitive cells which represent the precursors of both the erythroblasts and the granular leukocytes. The primitive cells in question are myeloblasts, as shown by their morphology and by the fact that they respond to the oxydase test. Histogenetically, pernicious anemia, myelogenous leukemia and leukanemia are closly related conditions, and represent different quantitative responses on the part of the bone marrow to regenerative stimuli acting on the same metrocyte, namely, the myeloblast. Leukanemia is probably not an independent disease but one of a group of rapidly progressive derangements of the blood-forming tissues due to infection.

CARCINOMA OF THE PANCREAS.

Among eleven cases of carcinoma of the pancreas in which the diagnosis was confirmed histologically, Francis H. Adler, Philadelphia (*Journal A. M. A.*, Jan. 15, 1921), found six in which was found an ulcerating cavity leading from the tumor mass into one or more of the hollow viscera. The greatest number of ulcerations occurred in the duodenum and transverse colon, which might be surmised from the close proximity of these organs to the pancreas. This study suggests, furthermore, that ulceration of the abdominal viscera by pancreatic carcinoma is of frequent occurrence, and that it deserves consideration in order to arrive at a true understanding of the clinical picture and course of this disease.

FAMILY OUTBREAKS OF EPIDEMIC POLIOMYELITIS.

F. W. Mulsow and William J. Matousek, Chicago (*Journal A. M. A.*, Jan. 15, 1921), observed an instance in which four cases of poliomyelitis developed in one family, consisting of a father, mother and eleven chil-

dren whose ages ranged from 5 to 23 years. No definite source of infection could be determined, since there were no cases of poliomyelitis in the vicinity or in the places the children visited during the summer. Mary, the first one to become ill, together with her sister Irma, the second to become ill, had visited a large city park a week prior to the onset of her illness, and no doubt in going to and from the park on the street car came in contact with a large number of people. Mary and Irma were simultaneously infected, and Harry and John were also simultaneously infected about two weeks later. This apparent simultaneous infection of the girls and also of the boys is in accordance with observations in other family outbreaks; but whether the source of infection for all four cases was a common source, or whether the boys became infected from the girls, cannot be determined definitely.

TREATMENT OF HEREDITARY SYPHILIS.

Philip C. Jeans, St. Louis (*Journal A. M. A.*, Jan. 15, 1921), describes in detail a plan of treatment for hereditary syphilis which has been in use in the children's clinic of the Washington University Dispensary and in the St. Louis Children's Hospital for a period of four years. The child attends the clinic once a week. At each visit, 0.03 c.c. (½ minim) of a 1 per cent solution of mercuric chlorid for each kilogram (2⅕ pounds) of body weight is injected intramuscularly. Mercury with chalk is prescribed three times daily by mouth in doses ranging from 13 mg. (⅕ grain) for small infants to 100 or even 130 mg. for the largest children. A laxative effect is avoided by decreasing the dose when necessary. Every two months there is started a course of three intravenous injections of arsphenamin given at weekly intervals. The dosage is 0.01 gm. for each kilogram of body weight. Mercury administration is not interrupted for the arsphenamin course. A rest period of from four to eight weeks is given during the first year of treatment, provided the attendance has been sufficiently regular. Infants are required to continue such a routine for at least one year, and older children for at least two years, regardless of what the Wassermann reaction shows. Treatment is continued in the same manner for as much longer than this as seems indicated by the clinical signs of the Wassermann reaction. It has been found desirable to continue treatment for six months or longer after all evidences of activity, including the Wassermann reaction, have disappeared.

MECHANISM OF SHOCK AND EXHAUSTION.

George W. Crile, Cleveland (*Journal A. M. A.*, Jan. 15, 1920), says that the man in acute shock or exhaustion is able to see danger, but lacks the normal muscular power to escape from it; his temperature may be subnormal, but he lacks the normal power to create heat; he understands words, but lacks the normal power of response. In other words, he is unable to transform potential into kinetic energy in the form of heat, motion and mental action, despite the fact that his vital organs are anatomically intact. His mental power fades to unconsciousness; his ability to create body heat is diminished until he approaches the state of the cold-blooded animal; the weakness of the voluntary muscles finally approaches that of sleep or anesthesia; the blood pressure falls to zero; most of the organs and tissues of the body lose their function. It is evident, therefore, that in exhaustion the organism has lost its self-mastery. Self-mastery is achieved only by the normal action of the master tissue—the brain. This subject is gone into at some length by Crile. He concludes finally, that the brain is an organ of intense metabolism. The brain cells may be conceived as having their protective and nutritive cytoplasm evolved to function at a distance. The energy-transforming function of the brain has such high selective value in the biologic sense as to confer a selective value also on the structure and function of the liver and of the blood; for if the brain cells thus stripped cannot transform energy fast enough to drive the muscles speedily enough to escape from the enemy, then the liver and the blood will perish as well as the brain. The more completely the liver and the blood and the lungs and the kidneys keep the brain cells free from the impairing by-products of their active metabolism, the cleaner pair of heels will the pursuing enemy see. The brain cannot work continuously, but a reversible process is necessary at regular intervals to restore it. This process in the higher centers is called sleep. The more intense the activation, the more needed is sleep. The brain is the only organ that sleeps conspicuously. Of great significance is the fact that the entire man spends one-third of his time waiting for the brain to restore itself—to put itself again in the position of being able adaptively to transform potential into kinetic energy.

THORNWALDT'S DISEASE AND CHOREA.

In the case cited by C. F. Yerger, Chicago (*Journal A. M. A.*, Jan. 15, 1921), Thornwaldt's disease, which is characterized by the presence of a suppurating canal or sinus, in the recessus medius, which is the groove between the lateral halves of the adenoids, was the cause of a chorea. Removal of the focus of infection resulted in the cure of the chorea.

THE RELATIONSHIP OF HIGH BLOOD SUGAR TO FURUNCULOSIS.

In the case reported by William Thalhimer, Milwaukee (*Journal A. M. A.*, Jan. 29, 1921), the original complaint was of "attacks of multiple furuncles," and in investigating this condition it was discovered that the patient had a high blood sugar. The clue given by the high blood sugar was investigated further, and it is believed that the data indicate that this is a case in either the prediabetic stage, or else an unusually early stage of diabetes. This patient, aged 15, had an abnormal carbohydrate metabolism. In all probability the attacks of furunculosis were due to this abnormality in the carbohydrate metabolism, the clinical expression of which was the high blood sugar found originally. Although the blood sugar has never been reduced to within the usual normal limits, nevertheless, when it was kept

down, and when the carbohydrate intake was also kept down, the patient was temporarily free of furuncles. For thirty days, the furuncles showed no tendency to clear up in spite of active surgical treatment. When, however, the patient was put on a carbohydrate-free diet, the furuncles promptly began to heal and at the end of a few days had completely disappeared. This case was evidently not one of diabetes, but simply a condition of furunculosis superinduced by an abnormally high blood sugar.

THE TREATMENT OF PERNICIOUS ANEMIA BY SPLENECTOMY.

Fifty cases in which operation was performed, more than three years ago, are reviewed by H. Z. Giffin and T. L. Szlapka, Rochester, Minn. (*Journal A. M. A.*, Jan. 29, 1921). The immediate operative mortality of the series was 6 per cent. The deaths occurred in the first nineteen cases. The reduction of mortality is ascribed chiefly to more careful preoperative treatment and the exclusion of the anemias of the more acute type. Forty-two of the forty-seven patients who recovered from operation have died. Ten (21.3 per cent) lived longer than three years, while twenty-one (45 per cent) lived longer than eighteen months after operation. Five (10.6 per cent) of the forty-seven patients who recovered from operation were splenectomized four years and nine months ago, one four years and eight months, one four years and five months, and one four years and three months. These five patients at the time of their last reports were in good general condition. The preoperative history of these patients in each case was approximately one year; the total average duration of the disease was considerably more than five years. Including with these the patients who survived operation at least three years but who are now dead, there is a total of ten (21.3 per cent) in whom the total duration of disease before and after operation was four and one-half years or more. This is clearly longer than the average expectation of life of patients with pernicious anemia, and would seem to lead to the definite conclusion that life is prolonged in a considerable percentage of cases. On neurologic examination before operation, twenty-nine patients (58 per cent) showed definite evidence of sclerosis of the spinal cord. Eight more (16 per cent) registered complaints suggestive of early involvement of the spinal cord, making a total of thirty-seven patients (74 per cent). Marked degeneration of the cords has not progressed in patients in whom the degeneration was slight previous to splenectomy. It is possible that the progress of the degeneration is arrested in some of the patients. Mental symptoms have not developed following operation. In the selection of patients for operation in this series, preference was given persons between the ages of 35 and 45 with a previous history of one year or less, a favorable type of blood picture, and with little if any evidence of degeneration of the spinal cord. An absence of marked leukopenia with a polymorphonuclear rather than a lymphocytic predominance in the leukocyte count, marked hemolytic activity, estimated by the examination of the pigments in the duodenal contents in the presence of a competent bone marrow and a moderately enlarged spleen, were regarded as favorable to splenectomy. Patients in acute exacerbations and patients showing evidence of bone marrow exhaustion were excluded so far as possible. The histories of the surviving patients are given in full.

URINE IN SYPHILIS.

The urine was examined by Joseph Victor Klauder and John A. Kohner, Philadelphia (*Journal A. M. A.*, Jan. 8, 1921), in forty-three cases of untreated primary syphilis, the duration of which was from a few days up to the time of cutaneous manifestations. Urinary abnormalities were present in three cases. The urine was examined in forty-six cases of untreated secondary syphilis. Urinary abnormalities were present in four cases. The positive cases all showed albumin and granular casts, excepting two in which casts were absent. In two cases, red blood cells were present. The albumin consisted of a trace, except that in two of the secondary cases a light cloud was present with many granular casts, and in one red blood cells. The urinary abnormalities disappeared after treatment with arsphenamin and mercury. The clear blood serum and the urine, from the same patient, were mixed for the presence of precipitin or precipitogens in serum or urine. The serums and urine of twenty acute untreated secondary cases were tested in this manner. The results were negative in all. Either the antibody is absent in the serum, or the antigen from the urine or both may be absent, as indicated by the results. The Wassermann reaction was performed with the urine of sixty patients with syphilis in the different stages of the disease, many presenting acute symptoms and being untreated. Every patient yielded a positive blood Wassermann reaction, the majority of reactions being strongly positive with three different antigens. Of the sixty cases, the urines in but two yielded positive reactions. There is no characteristic feature in the urine of paroxysmal hemoglobinuria of syphilitic origin which serves to differentiate it from the same condition due to other causes. Results with urinary tests for syphilis were of no value as a means to the diagnosis of syphilis.

ALKALI RESERVE IN ABDOMINAL INFECTION.

During the course of some experiments carried out in producing peritonitis in dogs, A. Murat Willis, Richmond, Va. (*Journal A. M. A.*, Jan. 29, 1921), says he was impressed by the fact that in fatal cases, a considerable number of animals manifested convulsive seizures shortly before death. Knowing that an excess of alkali in the blood also might cause convulsions, the question was suggested whether there might not be an actual increase in the reserve alkali of the blood instead of the reduction that was formerly suspected. In order to answer this question, the blood of seven dogs that succumbed to peritonitis was studied, as well as the blood of one dog that was critically ill with peritonitis but recovered eventually. The carbon dioxid combining

powers of the seven animals succumbing to the peritonitis varied from 43.8 to 53.6 per cent by volume before any operative procedures. Three of these seven dogs showed a reduction of the reserve alkali at the last determination, which was made a short time before death. The remaining four dogs all showed an increase in the alkali reserve as death approached. None of the dogs showed an increase in the carbon dioxid combining power of the blood sufficient in amount to give rise to an "alkalosis," so it is improbable that the convulsions had any connection with the changes in the alkali of the blood. These results would seem to indicate clearly that acidosis is not an important factor in the course of peritoneal involvement.

PREVENTION OF DIABETES MELLITUS.

An analytical study of a considerable number of cases, as detailed in various life and mortality tables, leads Elliott P. Joslin, Boston (*Journal A. M. A.*, Jan. 8, 1921), to formulate this diabetic law: *It is rare for diabetes to develop in an individual above the age of 20 years who is habitually underweight, and when it does so develop the case will usually be found to be either extremely severe, extremely mild, or associated with a marked hereditary taint or degenerative stigmas.* The tendency to diabetes appears to be congenital. It is more intense in childhood; but, escaping that period, the individual is less and less likely to acquire the disease if he remains underweight, whereas in the obese the tendency finds a fertile soil. In the fat the predisposition may be no greater, but the external cause is more provocative. Diabetes occurs seventy-nine times more often in those more than 20 per cent overweight than in those more than 20 per cent underweight. Nervous excitement or nervous strain has also been considered a factor in the etiology of diabetes. It is notable, however, that soldiers returning from the front did not show sugar in the urine. The preponderant influence of obesity on the development of diabetes explains various peculiarities in diabetic case histories. In the presence of a wasting disease, diabetes is almost unknown. If the principle of low nutrition is effective in treatment, how much more will it be effective in prevention? And this the statistics of the 1,000 cases analyzed by Joslin prove. For the prevention of more than half of the cases of diabetes in this country, no radical undernutrition is necessary; the individual is simply asked to maintain the weight of his average fellowman.

INVOLVEMENT OF NERVOUS SYSTEM DURING PRIMARY STAGE OF SYPHILIS.

An analysis of 221 cases of syphilis in which only the primary sore was present, was made by Udo J. Wile and Clyde K. Hasley Ann Arbor, Mich. (*Journal A. M. A.*, Jan. 1, 1920). The early period at which these cases were studied is indicated by the fact that of this number, 106 were still negative in the blood at the time of the examination. In many of the cases, punctures were made at repeated intervals, and their course from mild involvement to complete restoration of the fluid on the one hand, and from mild involvement to definite involvement of the nervous system with the onset of symptoms on the other, could be noted. In virtually all cases in which a striking involvement was found at the first puncture and in which intensive treatment could be carried out, marked improvement in spinal fluid findings was noted following the treatment. Of the total number of cases studied (221), a deviation from arbitrary normal criteria (eight cells, negative Wassermann test, etc.), was found in sixty. Of this number, eleven cases showed merely an increase of one or two cells above the arbitrary normal of eight, and it may be justly contended that on such a basis involvement cannot be said to be definite. In the remaining forty-nine cases, definite involvement of the nervous system could properly be assumed on pleocytosis, increased solids, and positive Wassermann test, although not all of these findings were present in each case. Increased albumin and globulin, virtually parallel, were found in twenty-five cases, pleocytosis in twelve, and positive Wassermann test in eight cases. In three cases in which the colloidal gold test was carried out in the presence of active involvement as indicated by other criteria, the curve was identical in each case, being the ascending curve, fairly high in the middle and usually indicative of tabes. Of the entire number of cases examined, symptoms indicating central nervous system involvement were present in only a single case, in which continuous headache, extending over a week's time was found in association with positive findings throughout in the spinal fluid. It is apparent that involvement of the cerebrospinal axis could hardly occur at any time before actual systemic infection has taken place. The positive findings, including complement fixation in the spinal fluid before changes occur in the blood, are not indicative of the fact that the infection has not yet become generalized. The significance of such findings is no doubt due to the greater delicacy of the laboratory criteria as applied to the spinal fluid as compared with the Wassermann test in the blood. In other words, the positive spinal fluid findings in a case not yet positive in the blood indicate generalization, and such findings cannot be accepted as clinical evidence of neurotropism.

DETERMINATION OF CURE IN GONORRHEAL INFECTION OF THE MALE.

Cultures of prostatic and seminal fluids and first urine sediment, carefully collected, according to Russell D. Herrold, Chicago (*Journal A. M. A.*, Jan. 22, 1921), are the most reliable single means of determining whether or not gonorrhea is cured. For this purpose, phosphate agar with blood and ascites fluid is suitable, and the inoculated plates should be incubated under reduced oxygen tension. The complement fixation test is a valuable aid, but the results should be taken in conjunction with the cultural results. Low degree positive fixation may persist up to a year after positive smears and cultures can be obtained. However, with positive serologic reaction, cultures should be repeated at intervals and the patient kept under observation until the serologic

tests give negative results. The gonococcus may be identified by agglutination tests with polyvalent antigonococcus serum. A satisfactory antigen can be easily prepared as described in the article. The precipitin test appears less sensitive; but because of its greater simplicity, it may be used as a substitute for complement fixation under special circumstances. The use of provocative tests before taking cultures and smears is of no advantage. The pus cell content of smears and macroscopic urinary appearances may be misleading, and by themselves constitute no safe index of cure.

POLYPOID CARCINOMA OF THE STOMACH.

A case is reported by T. Grier Miller, Philadelphia (*Journal A. M. A.*, Jan. 22, 1921), in which a diagnosis was made of primary pernicious anemia eighteen months before death. The case is also noteworthy on account of the evidence which it presents in favor of ulceration with hemorrhage in benign gastric tumors and for the secondary development of malignancy in such neoplasms. The probability is stated that the malignant change was secondary to a benign adenoma.

PREVENTIVE MEDICINE

Edited by
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Section on Preventive Medicine, State Medical Society of Wisconsin

USELESS AND USEFUL HEALTH ACTIVITIES.*

BY MR. L. W. HUTCHCROFT,
ASSISTANT STATE HEALTH OFFICER.

I am prompted to deliver this paper largely as a result of seeing, over a period of years, many very useful, very effective and very efficient health organizations drawn aside from the chief fundamental work they have in hand to do work which is of only secondary importance. I have in mind one full-time health officer, who, as a result of the enactment of a local health ordinance providing for meat inspection, had to abandon practically every other health activity; communicable diseases were of no moment; placarding, quarantining, disinfectants, school inspection, and all that work, very fundamental, for the moment had to be forgotten in order to center the activities and in order to meet the popular demands of his people in inspecting meat supplies.

I have in mind another city where, on the passage of a local milk ordinance, the entire energies of the local health department were devoted exclusively to that milk inspection work. I would not decry any of these activities, but it seems to me, in searching about for a subject that would contribute something to the efficiency of our health work, that we ought to harken back to fundamentals, and that is what I shall try to give you in this paper.

My paper, by title at least, perhaps appears to be somewhat iconoclastic, but I assure you I believe fully everything I am going to try to give you and it is based upon actual knowledge of conditions in Wisconsin.

The subject of this discussion does not fully indicate what I shall try to present, but it presents, better than any other subject I can think of, the theme of my paper. I may state at the outset that I do not consider any undertaking by a health department, whether state or local, as useless which is an aid in the prevention and control of diseases, in education or in rendering valuable personal or community service. Our chief functions are health education and the prevention of communicable diseases. Any activity which interferes with that program or retards its full and complete development is not only useless but actually harmful to the best interests of the general public.

It is well recognized that while some of the ordinary activities of state and local health departments are of unquestionable value in conserving the public health, others are relatively ineffective or actually harmful. One well-known authority has thus expressed himself on this point: "I boldly assert that if every case of communicable diseases (particularly the first cases) were promptly reported to the proper local board of health and as promptly placed under effective sanitary control and so kept until danger of infection has passed, all the other present-day activities of boards of health, whether local, state or national, with the exception of those directed against certain causes of infant mortality and health education, might be dropped with no appreciable effect upon the general health or mortality."

It must be admitted that a part and in some instances a considerable part of the energy of many excellent health departments is devoted to combatting imaginary dangers or is applied to tasks that have only a remote bearing on the public health. This condition, as a rule, is not due to ignorance on the part of the health officials but

*Read before the Fifth Biennial Conference of the Health Officers of Wisconsin.

to the pressure of public opinion. Such pressure is often exerted directly through local ordinances and state laws passed by ill-advised local governing bodies and state legislatures, but sometimes also through agitation by mistaken enthusiasts or other channels of arousing and creating public opinion.

Many think that the health officer is engaged chiefly in chasing bad smells and preaching the use of the scrubbing brush and whitewash. The good mother is usually more interested in the removal of street dirt from the block where she lives than she is in the prompt reporting and control of dangerous communicable diseases which may cause the death of her child.

It is surprising how many people still believe that the chief function of government in promoting health is to clean streets, remove garbage, abate nuisances, inspect grocery stores, meat markets, toilets and other work having to do primarily with cleanliness and other conditions which may interfere with the peace and comfort of the general public. Sanitary environment is important especially in the growth of children but the most dangerous part of our environment is other human beings. Disease germs usually come from living men, women and children, not from street dust, sewer air or decomposing garbage.

Our best sanitary authorities agree that improper garbage disposal has very little to do with the spread of disease in a sewered city or that typhoid fever, diphtheria or other germ diseases are caused by sewer gas, tin cans, ashes, decaying vegetables or other waste. It often happens that with the beginning of a typhoid epidemic slovenly methods of handling harmless household refuse and the proper cleaning of streets and alleys is strongly emphasized and public attention is diverted from the real causes such as the water supply, milk supply and contact infections.

One of the chief reasons why some well organized health departments do not succeed in materially reducing the death rate and outbreaks of communicable diseases is that our means of approaching and actually bringing to the people our knowledge about disease prevention and healthy living are seriously deficient and unsuccessful. It is because the general interest of the people in good health is not aroused except possibly during periods of epidemics. It is possible to stimulate the public sufficiently so that they will be interested in good health and demand adequate health protection. When this is done great strides will be made in disease prevention and the death rate will be materially reduced.

So far as I know, there is not a single local or state health department in the country which is operated along strictly logical lines. Much is done that counts little for health and much is left undone which would save many lives.

For this condition of affairs the health officer is usually not to blame. He is not allowed to map out his work. He is not provided with sufficient funds. The ambitious councilman and the enthusiastic reformer think and often firmly believe that their pet projects are more important than all other health work put together. These people are enthusiastic. They have push and sometimes pull, and burden the health department with new responsibilities and new expenses when no money can be obtained for old and tried lines of work.

The impression is growing, even among well-informed persons, that public health departments are not primarily for the control of disease, but for the regulation of disease treatment and hygiene. The development of this program is opposed by the Christian Scientists and the various cults and fads who believe they know therapeutics as well as the health officer does, and how to live hygienic lives much better.

We can not protest too strongly against the attitude that the control of communicable diseases is a minor function of the health officer. What little is done is often regarded as a disagreeable policy duty, without field for the exercise of professional training or skill. The work therefore, quite naturally, is done by a health inspector without knowledge of human nature or of disease control. His work usually ends with the nailing of quarantine signs on the house and the disinfection of the home after death or recovery of the patient. The family is not told how to keep other children in this home from contracting the disease, on the theory, I presume, that this is the function of the attending physician. If the physician is relied on to impart this knowledge, it is usually not obtained.

Dr. Hill states that this attitude toward the work of a health department is not uncommon. "It is the outgrowth of the sad fact that the control of infection is not only an administrative but also a professional and technical farce, not over

one per cent efficient. If health officers really devoted their attention to infection, not conducting the campaign by a mere routine placarding of reported cases but as lively war with an enemy requiring to be sought out and conquered, no health officer would be able to complain of lack of employment or of dulness in his duties. We have only begun to study scientifically the communicable disease problem. Tuberculosis we have not really even begun to study from the epidemiological standpoint. Only a small beginning has been made in the proper control of venereal diseases."

The control and ultimate eradication of these diseases is often regarded, according to Dr. Hill, as a small side issue, something anyone can do—already largely done—hardly worth while. Even the fundamental error that the control of infection rests upon reporting by physicians is repeated over and over, yet few health departments can pretend to be 50 per cent efficient even in locating cases. The health officer should be so active in locating the cases that he will find them himself instead of waiting for a physician's report. Until the health department knows more of the ramifications of infection in a community than all the physicians put together, it will not be 100 per cent efficient.

In recent years expenditures for health purposes have been mounting rapidly by millions of dollars. Fifteen years ago, according to careful compilations,, the total expenditures for health purposes, exclusive of the expenditures of the Federal Government, was $9,500,000 per year. For 1917, the most recent year for which statistics are available, our various state and local boards spent over $33,700,000 or an increase of nearly 400 per cent. Of this large sum $11,250,000 was spent by state boards of health and other state agencies. Cities of over 30,000 population spent no less than $15,900,000 in the same year. Smaller cities spent about $3,000,000 and counties about $3,500,000.

It is impossible to determine what part of this large total is used in communicable disease control. The various state and city health budgets which have been examined prove clearly that the large bulk of this fund is devoted to street cleaning, abating nuisances, garbage collection, inspection services of various kinds and other activities which have only a very remote, if any, bearing on the communicable disease problem.

The ventilation of our homes, offices, public buildings and places of employment requires the expenditure of large sums of money and a great deal of the health officer's time in trying to enforce state and local regulations. Much has been done to prove that a great deal of this work is unnecessary, provided overheating and stagnation of the air is avoided and the moisture content regulated. The work of Ben Flugge, Hill, Hymann and others proves quite conclusively that much, if not all, of the effect from bad air and crowded rooms is not due to carbon dioxide or other poisonous excretions in expired air but results from heat, moisture and lack of circulation of the air in the room. When this condition is fully understood the problems of heating and ventilation will be very much simplified.

The value of terminal fumigation after death or recovery from a dangerous communicable disease is seriously questioned by many competent authorities. There is no doubt that much of this work is so poorly done that it has no value as a health agency. If thorough cleaning, airing and washing with an improved disinfecting solution under the personal supervision of a competent full-time health officer or inspector could be substituted for most of the formaldehyde fumigation, in my opinion better results would be accomplished at much less public expense.

The public funds now used to purchase fumigators would aid materially in paying the salary of a full-time health officer who could properly supervise all health work.

Until we have properly compensated health officers who devote all their time to health work it will be necessary to continue our present system of fumigation. The whole subject of disinfection should be studied by laboratory experiments and as a problem in practical, economical health administration.

Many so-called health activities of slight or questionable value might be mentioned but I believe I have pointed out a sufficient number to convince any conscientious health officer that he should oppose with all his energy any diversion of his activities from the problem of communicable disease control. Pasteur states that it is in the power of man to cause all germ diseases to disappear from the world. Our work, therefore, as health officials, is to do our part in the prevention and control of these diseases.

The careful supervision of public water supplies

is necessary to prevent typhoid fever. The milk supply must also be given careful attention to prevent scarlet fever, typhoid fever, tuberculosis and other milk-borne diseases. By the sanitary control of milk we should aim not only to maintain a standard of butterfat and total solids but also proper standards of cleanliness in producing and handling the milk and in the health of the dairy cows. This is an important health problem and is not given sufficient attention.

Communicable disease carriers, such as typhoid carriers and diphtheria carriers, are now recognized as important agents in the spread of disease. The early detection, isolation and treatment of carriers must be provided for in proper disease control. The necessary laboratory equipment is now available in Wisconsin to amply safeguard the general public from disease carriers, if fully utilized. No case of typhoid fever or diphtheria should be allowed to mingle with the general public until it is proven that the person is not a disease carrier. This is fundamental health work.

The examination of school children is also very valuable in disclosing physical defects interfering with the healthy development of the child and also in locating disease carriers and mild unreported cases. The school inspection work is a valuable adjunct of any well-organized health department and should be directed by the health officer.

Our infant mortality rates in Wisconsin and for the entire country are being rapidly reduced as a direct result of our work in child welfare. It has been said that for the expenditure of a certain sum, the saving of a life can be guaranteed. This is especially true in child welfare work where results obtained are so clearly shown. One author states that the degree of success achieved in reducing the number of deaths among children of preschool age is limited only by the amount of money the community or the state is willing to spend.

In conclusion I will state that health education and the proper control of all germ diseases are the vital activities to consider in any health organization. Both are essential to the public welfare and must be considered together. Health education is necessary to disease control and any effort to reduce the number of cases and deaths from preventable diseases is doomed to failure unless the public is educated along health lines.

Public opinion formed through education is necessary in order that the health officer may properly formulate and carry out the regulations necessary to safeguard the public health in his district. He cannot for any length of time maintain any standard in which he has not the support of his people. Education in public health and sanitation is necessary in order that the health officer may not spend his time solving the problems which a careless and unthinking public set before him.

These careless individuals invite disease, help in its spread and aid in establishing insanitary conditions. The extent to which health education is deficient is very accurately shown in the time and expense devoted to the investigation and abatement of nuisances. Public health education is an effective way to establish the proper state of mind. It should be a foundation stone on which the health officer can build his preventive work.

EPILEPSY A SYMPTOM OF SPLANCHNOPTOSIS.

By Charles A. L. Reed, M. D.,
Cincinnati, Ohio.

(Abstract of paper read before the Southern Surgical Association, Hot Springs, Va., December 16, 1920.)

The fact that chronic convulsive toxemia, usually called epilepsy, is constantly associated with displacements of the abdominal organs has now been demonstrated in 810 consecutive cases in my own hands. This demonstration has consisted of, first, the clinical history and, second, the physical examination of the patient; third, the serial X-ray study, and, finally, in the vast majority of instances, the surgical exploration of the abdominal cavity. This record, showing the additional and significant fact that the visceral condition is always antecedent to and associated with the convulsion phenomena, as shown by the earlier development of constipation, and the absence of both hereditary factors and extra-abdominal lesions, forces the conclusion that so-called epilepsy occurs only as a symptom of splanchnoptosis. This conclusion is further confirmed not only by my own observation but by the daily observation of every general practitioner to the effect that epilepsy is always associated with constipation; that the epilepsy is worse when the constipation is worse; and that the most effective, ready-at-hand relief from seizures is offered by laxatives. It was this fact, confirmed by surgical experience, that prompted me to write my first article on the subject under the title of "Constipation and Epilepsy" (1) and upon which I based my second article entitled "The Probable Cause and Logical Treatment of Epilepsy." (2) My later experience recorded in subsequent reports, (3) has shown that constipation while antecedent to and associated with the seizures in these cases is, like the seizures themselves, a symptom of splanchnoptosis. The mere fact that many people who have splanchnoptosis do not have so-called epilepsy does not and cannot in the least invalidate the observed and here recorded fact that eight hundred and ten people who

did have epilepsy likewise had splanchnoptosis and that the development of the splanchnoptosis was antecedent to the epilepsy. The explanation of this difference, which will doubtless sometime be furnished through biochemic research, is something with which I have no concern in this connection. I am simply interested at this time in the basic fact, namely, that epilepsy is always associated with and is therefore a symptom of splanchnoptosis.

The basic fact, here affirmed, is susceptible of verification at the hands of every practitioner who sees these cases and especially by every institution now acting in a custodial capacity to large groups of these unfortunates. To begin with, the cases must be examined—really examined. This means that a thorough history must be taken. Then the patient must be stripped. The physical inventory should be carefully made, front and back, from head to foot. Special search should be made for possible foci of infection, not as primary but as ancillary factors in the case. The abdomen should be gone over, first, with the patient on his back; next, with him erect. A very little practice with abdominal percussion will enable the physician to detect the gastric note, the cecal note, the transverse-colonic note, sometimes the sigmoidal note. With the patient on his back, these notes will generally be found approximately in their normal positions, with the possible exception of the cecal note which in these cases will always be found low in the right lower quadrant, sometimes as low as Pouparts ligament. Now stand the patients up and it will be found that all of these notes, these separate areas of resonance, will have become obscured, more or less blended, by gravitation into the lower zone of the abdomen. The only note that does not thus migrate downward is that of the cardia which, however, is generally farther around to the left and toward the back. In other words, the viscera will have dropped. This examination is all very easy—and very, very important.

Then all cases, especially in the present status of the whole question, should be given an X-ray study. When this study is done right it is very clarifying; when done wrong it is very misleading. It is done approximately right when the following rules are observed: (1) The patient should be free from all laxatives or enemas for at least twenty-four hours before taking the barium meal; (2) the barium meal should be taken at 9 o'clock in the morning; (3) the first picture, to show the stomach and beginning duodenal transit, should be taken ten minutes later—*with the patient upright;* (4) the second picture, to show conditions at the ileo-cecal juncture, should be taken at 3 o'clock in the afternoon—*with the patient prone;* (5) the third picture, to show the condition and position of the colon, should be taken at 9 o'clock the next morning—*with the patient upright.* These pictures are essential; others (after ingestion) to show (a) completed transit or (b) relative positions of colon prone and standing; or (after enema) to show (c) redundancy or not of the sigmoid; (d) ileo-cecal competency or not; or (e) other conditions, may be taken or not according to the indications of the individual case. Of course decensus of the liver and kidneys is not shown by the X-ray but may be detected by careful palpation in different positions.

The ease with which all of this can be done, and the importance of the facts thus elicited, make such examination of these cases an imperative duty not only for individual practitioners but for institutions. I can not resist this opportunity to insist more especially upon the duties of institutions in the premises.

(1) All institutions for epileptics should be provided with a well-equipped, competent and liberally supported roentgenologic service.

(2) There should be a roentgenologic survey of the entire epileptic population of all public institutions for the purpose of determining the condition of the abdominal viscera.

(3) The diagnosis should be individualized in each case with reference, first, to visceral causative factors; and, second, to available treatment with the object and understanding that the treatment in all cases should be directed to overcoming such visceral conditions either by medical and hygienic treatment or, when necessary, by surgical restitution of the parts.

The same rules apply, with possibly greater force, to all hospitals for the insane—but that is another story.

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(1) Cincinnati Lancet Clinic, July 25, 1914.
(2) Journal American Medical Assn., March 27, 1915.
(3) Ibid, January 29, 1916; September 20, 1916.

DID NOT QUESTION THE BILL.

Not long ago those in charge of an old church in Belgium decided to repair its properties and employed an artist to touch up a large painting. Upon presenting the bill, the committee in charge refused payment unless the details were specified, whereupon he presented the items as follows:

To correcting the Ten Commandments	$5.12
Embellishing Pontius and putting new strings on his bonnet	3.20
Putting new tail on rooster of St. Peter and mending his comb	2.20
Repluming and guilding the left wing of the Guardian Angel	5.18
Washing the servant of the High Priest and putting carmine on his cheeks	5.02
Renewing Heaven and adjusting the stars and cleaning the moon	7.14
Touching up Purgatory and restoring the lost souls	3.06
Brightening up the flames of Hell and putting a new tail on the Devil and mending his left hoof and doing odd jobs for the damned	7.14
Rebordering the robes of Herod and adjusting his wig	4.00
Taking the spots off the Son of Tobias	1.30
Putting a new stone in David's sling, enlarging the head of Goliath and extending Saul's legs	6.13
Decorating Noah's Ark and putting a head on Shem	3.13
Mending the shirt of the Prodigal Son and cleaning his ear	2.36

(Better when read aloud.)

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

DANE COUNTY.

The regular monthly meeting of the Dane County Medical Society was held in the Association of Commerce rooms, Madison, Tuesday evening, January 11, at 8 o'clock. The program consisted of the following: Dr. A. G. Hough presented a paper on "Fractional Examination of Stomach Contents"; Dr. Howard Curl on "What the X-ray Man Can and Cannot Tell About Stomach Disorders from an X-ray Examination," and Drs. R. H. Jackson and H. E. Marsh discussed "Gastric Symptoms in Diseases of the Gall Bladder and Appendix." A number of interesting clinical cases bearing on these subjects were presented.

HOMER CARTER, M. D., *Secretary.*

JEFFERSON COUNTY.

At the annual meeting of the Jefferson County Medical Society, held at Jefferson, December 17, the following officers were elected: President, Dr. G. E. Eck, Lake Mills; vice-president, Dr. L. H. Nowack, Watertown; secretary-treasurer, Dr. H. P. Bowen, Johnson Creek; censor, Dr. H. P. Bowen, Johnson Creek.

The following amendment was recommended for adoption at the next regular meeting of the Society: "Any resident member of the Jefferson County Medical Society who has failed to attend at least two of the regular meetings of the Society during the period of one year must present his excuse to the Society prior to the convening of the annual meeting.

"At each annual meeting, the Board of Censors shall review the excuses presented. In the event the Board of Censors shall deem the excuses illegitimate, the offending members shall be disqualified to membership in the Society for a period of one year. Failure to present excuses at the above specified time shall be considered admitted ineligibility effective at the time of the annual meeting.

"It shall be the duty of the Board of Censors to review at the annual meeting the Secretary's record of roll call for the past year and report to the Secretary the ineligibles for the coming year.

"This amendment shall become effective when adopted by a two-thirds vote of the members at the meeting following the first reading, provided a copy of the amendment has been sent to every member of the Society ten days previous to the date of the next regular meeting, at which final action will be taken."

H. P. BOWEN, M. D., *Secretary.*

KENOSHA COUNTY

At the regular meeting of the Kenosha County Medical Society held at the Elks' Club, January 5, thirty-five physicians were in attendance. Twelve o'clock dinner was served, after which Dr. A. A. Pleyte of the Wisconsin Anti-Tuberculosis Association held a very interesting chest clinic showing the "Modern Methods of Chest Examinations." His address was illustrated with demonstrations of the X-ray and the stethoscope.

H. M. RIPLEY, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Friday evening, January 14, at 8:30 o'clock. The following program was presented: "Policies of the Administration," by the president, Dr. J. J. Seelman; "Interpretation of the 18th Amendment as Applied to the Medical Profession," by Thomas J. Delaney, Federal Prohibition Director, and the "Proper Co-operation Between the Dispensaries and the Medical Profession," by Dr. J. P. Koehler, Superintendent of the County Dispensary.

DANIEL HOPKINSON, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

The annual meeting of the Milwaukee Medical Society was held in the Colby-Abbot Building, Milwaukee, Tuesday, January 11. The following business was transacted: The election of officers for 1921, which resulted as follows: President, Dr. L. M. Warfield; first vice-president, Dr. R. W. Blumenthal; second vice-president, Dr. Rock Sleyster; secretary, Dr. L. G. Sykes; treasurer, Dr. J. P. McMahon; the annual reports of the officers were presented, the reports of the Council and the Special and Standing Committees were read and discussed. The following resolution was adopted by the Society:

"We, the members of the Milwaukee Medical Society, move to amend Section 2 of Chapter IX as follows: To substitute the words and figures Twenty Dollars ($20.00) for the words and figures Ten Dollars ($10.00)," this referring to the annual dues.

Dr. Frank Wright of Chicago addressed the society on the following subject, "Some Clinical Applications of Results Secured by Partition of Non-Protein Nitrogen of the Blood."

The regular meeting of the Milwaukee Medical Society was held in the society rooms, January 25, at 7:45. Dr. Rudolph W. Holmes of Chicago presented a paper on "The Restrictions to the Indications for Caesarean Section," and Dr. R. W. Roethke of Milwaukee one on "Operation and After Effects of Caesarean Section." Discussion was opened by Dr. C. H. Davis.

OSCAR LOTZ, M. D., *Secretary.*

NINTH COUNCILOR DISTRICT.

The winter meeting of the Ninth Councilor District Medical Society was held at St. Joseph's Hospital, Marshfield, Thursday afternoon and evening, January 27. The clinic was opened at two o'clock by Dr. F. C Rodda, University of Minnesota, conducting the Pediatric Clinic; Dr. J. C. Litzenberg of the University of Minnesota conducted the Gynecological and Obstetrical Clinic. Laboratory demonstrations were given by Miss Julia Outhouse, M. S., Dr. H. H. Milbee, and Mr. Bert Cross.

Dinner was served at six o'clock, after which the following program was given: "General Therapy in Diseases of Children," Dr. F. C. Rodda; "The Present Status of the Treatment of Puerperal Eclampsia"; "Gall-Stones," by Dr. O. N. Mortenson; and "Basal Metabolism," by Dr. F. E. Turgasen.

JOS. F. SMITH, M. D., *Secretary.*

PRICE-TAYLOR COUNTY

The semi-annual meeting of the Price-Taylor County Medical Society was held at Park Falls, January 11. Dr. G. C. Nedry, Medford, was elected president; Dr. J. T. Speck, Park Falls, vice-president and Dr. G. C. Wichman, Rib Lake, secretary. President-elect, Dr. G. C. Nedry, gave a very interesting talk on Fraternal Fellowship and Co-operation. The deputy state health officer of Eau Claire also gave a very instructive talk on public health conditions.

G. C. Wichman, M. D., *Secretary.*

RACINE COUNTY

The annual meeting of the Racine County Medical Society was held December 16 at the Elks' Temple. Officers for the ensuing year were elected as follows: President, Dr. F. C. Christensen; vice-president, Dr. S. Sorenson; secretary-treasurer, Dr. Susan Jones; censor, Dr. W. P. Collins; delegate, Dr. S. E. Fazen; alternate, Dr. W. S. Haven.

Dr. E. L. Tharinger of Milwaukee addressed the society on the subject of "Diphtheria and Antitoxin," and related some of the effects of the toxin. Dr. Robert Oleson of the U. S. Public Health Service, advised administering large doses of antitoxin at the outset, holding that the best results would be obtained by that plan. Dr. George Hoyt of the State Board of Health discussed communicable diseases before the society.

Susan Jones, M. D., *Secretary.*

ROCK COUNTY

The Rock County Medical Society held its first meeting of the new year at the Beloit Y. M. C. A., Tuesday, January 25. Dr. Milton M. Portis of Chicago addressed the society on "A Plea for Earlier Diagnosis of Carcinoma of the Colon," illustrating same with lantern slides. The following officers have been elected for 1921; President, Dr. C. H. Sutherland; vice-president, Dr. F. W. Leeson; secretary, Dr. E. B. Brown; censor, Dr. E. C. Helm.

E. B. Brown, M. D., *Secretary.*

ASSOCIATION NEWS

MINUTES OF THE MEETING OF THE COUNCIL, STATE MEDICAL SOCIETY OF WISCONSIN, UNIVERSITY CLUB, MILWAUKEE, JANUARY 10, 1921.

The Council was called to order Monday A. M., January 10, 1921, with the following members present: Drs. Wilkinson, Smith, Cairns, Zierath, Hall, Dearholt, Connell, Dodd, Cunningham, Evans, Sleyster and McGarty.

The following Section Officers also attended the meeting: Drs. Stovall, Prince, Derge and Lorenz.

The minutes of the previous meeting were read and approved, and the reports of the Councilors, the Secretary and the Treasurer were read and accepted.

The following officers were re-elected for the coming year: Chairman, Edward Evans, La Crosse; Secretary, Rock Sleyster, Wauwatosa; Treasurer, S. S. Hall, Ripon.

Dr. G. V. I. Brown, President of the Tri-State District Medical Society, appeared before the Council and explained that the Tri-State District Society did not consider it feasible to change their place of meeting and would meet in Milwaukee following the meeting of the State Society.

It was moved and carried that the date of the State Society meeting be fixed as the Wednesday, Thursday and Friday of the week following the State Fair.

It was moved and carried that the State Society appoint its own Arrangement Committee and sub-committees in order to be independent of the profession of the local committee and not to burden them.

It was moved and carried that the Secretary write Judge K. M. Landis of Chicago regarding the indiscriminate prescribing of alcoholics by the profession, enclosing a copy of the resolutions passed at the meeting of the State Medical Society in La Crosse.

Resolutions expressing a feeling of our loss through the death of Dr. H. W. Abraham of Appleton were unanimously passed, and the Secretary instructed to send a copy of same to Mrs. Abraham.

The following resolutions were adopted:

Whereas, The responsibility for the enactment, amendment or repeal of laws affecting the health of the citizens of the State of Wisconsin and the educational and practical fitness of those licensed to practice the art of healing, rests solely with the State Legislature; *therefore be it*

Resolved, By the Council of the State Medical Society of Wisconsin, in session in the City of Milwaukee on this tenth day of January, 1921, that the State Medical Society of Wisconsin, as an organization, will not advocate the framing of new laws, the amendment of or the repeal of existing statutes affecting the health of the citizens of the State of Wisconsin, or the educational or practical fitness of those licensed to practice the art of healing; *be it further*

Resolved, That the State Medical Society of Wisconsin will, through its officers, its Council, or its Committee on Public Policy and Legislation, on the request therefor, aid and assist by all means in its power the State Legislature, or any civic organization, in the obtaining of information necessary to the proper and just framing of any new statutes, or the amendment or repeal of existing statutes; *be it further*

Resolved, That the Secretary of the State Medical Society of Wisconsin be instructed to send copies of these resolutions to the presiding officer of the Senate and of the Assembly of the State Legislature.

There being no further business, the meeting adjourned.

Respectfully submitted,
Rock Sleyster, *Secretary.*

THE AMERICAN CONGRESS ON INTERNAL MEDICINE.

The Fifth Annual Session of The American Congress on Internal Medicine will be held at Baltimore, Md., week of February 21-26, 1921.

The activities of The Congress will be largely clinical.

Ward-walks, Laboratory Demonstrations and Group or Amphitheatre Clinics will be conducted daily by members of the medical faculties of The Johns Hopkins and The Maryland Universities.

Further information may be secured by addressing The Secretary-General, 1002 N. Dearborn St., Chicago, Ill.

PRELIMINARY PROGRAM, ANNUAL CONGRESS.

MEDICAL EDUCATION, LICENSURE, HOSPITALS AND PUBLIC HEALTH.

March 7, 8, 9 and 10, 1921.

Florentine Room, Congress Hotel, Michigan Avenue and Congress Street, Chicago.

PROGRAM.

MONDAY, MARCH 7, 1921.

Morning Session—9:30 A. M.

Introductory Remarks, Arthur Dean Bevan, M. D., Chairman of the Council on Medical Education and Hospitals, Chicago.

Practice of Medicine Under the Group System (Speaker to be selected).

Symposium on Graduate Training in the Various Medical Specialties.

Medicine and the Medical Specialties—

(a) Internal Medicine, George Blumer, M. D., Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Conn.

(b) Pediatrics, Harry M. McClanahan, M. D., Professor of Pediatrics, University of Nebraska College of Medicine, Omaha.

(c) Nervous and Mental Diseases, Arthur S. Hamilton, M. D., Professor of Nervous and Mental Diseases, University of Minnesota Medical School, Minneapolis.

(d) Dermatology and Syphilology, William A. Pusey, M. D., Emeritus Professor of Dermatology, University of Illinois College of Medicine, Chicago.

Surgery and the Surgical Specialties—

(a) Surgery, Charles H. Frazier, M. D., Professor of Clinical Surgery, University of Pennsylvania School of Medicine, Philadelphia.

(b) Ophthalmology, Walter B. Lancaster, M. D., Boston.

(c) Oto-Laryngology, Wendell C. Phillips, New York.

(d) Orthopedic Surgery, Robert W. Lovett, M. D., Professor of Orthopedic Surgery, Medical School of Harvard University, Boston.

(e) Urology, Hugh H. Young, M. D., Clinical Professor of Urology, Johns Hopkins University Medical Department, Baltimore.

Afternoon Session—2. P. M.

Obstetrics and Gynecology, J. Whitridge Williams, M. D., Dean and Professor of Obstetrics, Johns Hopkins University Medical Department, Baltimore.

Public Health and Hygiene, Victor C. Vaughan, M. D., Dean and Professor of Hygiene and Physiological Chemistry, University of Michigan Medical School, Ann Arbor, Mich.

Preclinical Subjects—

(a) Anatomy, Clarence M. Jackson, M. D., Professor of Anatomy, University of Minnesota Medical School, Minneapolis.

(b) Physiology, Joseph Erlanger, M. D., Professor of Physiology, Washington University School of Medicine, St. Louis.

(c) Pharmacology and Therapeutics, Charles W. Edmunds, M. D., Professor of Materia Medica and Therapeutics, University of Michigan Medical School, Ann Arbor, Mich.

(d) Pathology and Bacteriology, James Ewing, M. D., Professor of Pathology, Cornell University Medical College, New York.

Summary of Reports on Graduate Training in the Specialties, Louis B. Wilson, M. D., Chairman of the Councils Committee on Graduate Medical Education, Rochester, Minn.

The Relation of the General Practitioner to the Specialist (Speaker to be selected).

TUESDAY, MARCH 8TH.

Morning Session—9:30 A. M.

Medical Curriculum, Clinical Subjects.

Introductory Remarks, William Pepper, M. D., President of the Association of American Medical Colleges, Philadelphia.

Medicine and Medical Specialties, Charles P. Emerson, M. D., Dean and Professor of Medicine, Indiana University School of Medicine, Indianapolis.

Surgery and Surgical Specialties, Hugh Cabot, M. D., Professor of Surgery, University of Michigan Medical School, Ann Arbor, Mich.

Afternoon Session—2 P. M.

Obstetrics and Gynecology, J. Whitridge Williams, M. D., Dean and Professor of Obstetrics, Johns Hopkins University Medical Department, Baltimore.

The Undergraduate Clinical Curriculum, Frank Billings, M. D., Professor of Medicine, Rush Medical College, Chicago.

WEDNESDAY, MARCH 9TH.

Morning Session—9:30 A. M.

Medical Examinations and Licensure.

Introductory Remarks, David A. Strickler, M. D., President of the Federation of State Medical Boards, Denver.

Medical Education and Licensure in America as Viewed by European Visitors, Walter L. Bierring, M. D., Secretary of the Federation of State Medical Boards, Des Moines, Iowa.

Model Qualifying Examination as Demonstrated by the National Board of Medical Examiners, Horace D. Arnold, M. D., Member of the National Board of Medical Examiners, Boston.

Education of the Public Regarding Problems of Medical Licensure, George W. Whiteside, Esq., Counsel for the New York State Medical Society, New York.

The Chiropractic Problem, Charles B. Pinkham, M. D., Secretary, Board of Medical Examiners of the State of California, Sacramento, Calif.

Afternoon Session—2 P. M.

Conference on Hospital Service.

Introductory Remarks, Frank Billings, M. D., Professor of Medicine, Rush Medical College, Chicago.

Leading Paper by S. S. Goldwater, M. D. Superintendent of Mount Sinai Hospital, New York.

Other Papers or Addresses by:

Father Charles B. Moulinier, President of the Catholic Hospital Association, Milwaukee.

Miss Lulu Graves, Professor of Dietetics, Cornell University Medical College, New York.

Miss Donelda R. Hamlin, Director, Hospital Library and Service Bureau, Chicago.

General Theme, The American Conference on Hospital Service.

George E. Vincent, M. D., or Mr. E. R. Embree of the Rockefeller Foundation, New York.

Ray Lyman Wilbur, M. D., President of Leland Stanford University, San Francisco.

William J. Mayo, M. D., Rochester, Minn.

THURSDAY, MARCH 10TH.

Morning Program—9:30 A. M.

Rural Health Centers.

Rural Health Centers as an Aid to General Practitioners, Victor C. Vaughan, M. D., Chairman, Council on Health and Public Instruction, American Medical Association.

What We Have Done in Iowa, F. E. Sampson, M. D., Creston, Iowa.

General Discussion opened by Frank Billings, M. D., Chicago.

Afternoon Session—2 P. M.

The Organization of the Public for Health Work.

From the Standpoint of the Council on Health and Public Instruction of the American Medical Association, W. S. Rankin, M. D., Secretary, North Carolina State Board of Health, Raleigh, N. C.

From the Standpoint of the State Health Officer, S. J. Crumbine, M. D., Secretary, Kansas State Board of Health, Topeka, Kan.

From the Standpoint of the State Medical Society, F. C. Warnshuis, M. D., Secretary, Michigan State Medical Society, Battle Creek, Mich.

From the Standpoint of the State Public Health Association, Celestine J. Sullivan, Secretary, League for the Promotion of Public Health, San Francisco.

From the Viewpoint of the Voluntary Public Health Association, Charles J. Hatfield, M. D., Secretary, National Tuberculosis Association, New York.

CORRESPONDENCE

MEDICINE IN VIENNA TODAY.

Vienna, December, 1920.

To the Editor of the Wisconsin Medical Journal.

Dear Sir: No doubt to a good many of your readers and particularly those who have been here at some time or other, it will be interesting to know something of the present-day Vienna, and what has been done here and is being done since the world's war broke out. What progress, if any, has been made, what discoveries can be reported, and how the old pretty city of Vienna is getting along.

For the first part of my stay I have been at Innsbruck, the capital city of Tyrol, according to Burton Holmes perhaps the most beautiful city in the world for scenery at least, incidentally the place where I was born and where my old mother resides, with whom I wanted to be so badly after the war. I had been collecting money, food and clothing for the poor here and of Tyrol, and they are all poor, very poor here now, except the war profiteers, and I had many a heart-feast in seeing them enjoy things that they had not seen since 1914.

Innsbruck, a city of about 70,000, is gorgeously situated between high, snow-clad mountains, enjoys a first class university with medical department, well equipped and with very large clinical material, accessible to the student because most patients are poor. If we figure that the professors, mostly former assistants of the Vienna University, (always the real workers and progressives), are comparatively young men, and that there are but very few post-graduates working, then you can imagine how perfect the opportunities for studying must be. I had more opportunities than I could take care of. Figuring this, and the delightful surroundings and, last but not least, the fact that it costs almost nothing to live here with American money, I wonder that this place has not been discovered sooner.

Here in Vienna conditions are very similar, both cities belonging to the new republic of German-Austria. American dollars before the war were 5 crowns, today one dollar is 600 crowns. Of course, prices have soared more here than in Vienna, but one can still live with one dollar a day and fairly well at that. It is true, things socially and economically are bad here. There is much poverty, for want of things almost more than lack of money, and they limit the number of guests on account of that. There is great difficulty in securing rooms, for here more than in the United States, there has been a total cessation of building since 1914. Everything seems filled to the brim. But by next spring things might be somewhat relieved, particularly the university people being very anxious to get back the Americans, who after all are much admired and respected for the good relief work they have done and are still doing. No enmity or reproach in spite of the war.

Of the old Professors, many are no more. Politzer, to whose memorial I was invited to represent America in Otology, Urbantschitsch, Chiary, Koschier and Schauta have died. New, very active men who are well known to former students from America, have taken their places. Neumann is professor in Otology in the Allgemeines Krankenhaus, Alexander at the Policlinic, Hajeck is successor to Chiary, Marschick to Koschier. Meller is professor in the Eye Department succeeding Professor Fuchs, who has retired. Dr. Ruttin is Privat-Docent under Neumann. Barany, of Nobel prize fame and whose romantic war experience is well known, has accepted a professorship at Upsala, Sweden. Professor Eiselsberg and Lorenz are still very active and were very much

pleased to see an American. They and also Professor Schlesinger, well known in Milwaukee and who has one of the medical clinics, asked me to extend greetings to the American medical profession. All of them would be pleased to hear from their American friends.

The clinics are busy as always, the eye clinic for instance has more operations than ever. What is lacking is equipment and food. The assistants and particularly the patients do not get enough and good food. The poor fellows keep on working nevertheless. The food of the patients would hardly be good enough for a self-respecting American dog.

You ask me what they have that is new in the medical line? Many things, and other things that have been brought out before the war, were and are being perfected. The war had its influence on medicine and surgery just as it had in America. Tuberculosis in its various forms is being attacked vigorously with tuberculin, emulsion of bacilli and other injections. Cancer, particularly the inoperable form of the abdominal cavity, is being attacked by new X-ray methods. Instead of exposing the abdomen strongly from one tube, five or six tubes of a new kind are arranged concentrically around the body, lessening the danger of burns, because individually they are weaker and still giving much more energy to the organ to be attacked. Good results are being reported. In the ear, nose and the eye many interesting things can be seen. It would lead too far to count them up in this space.

The post-graduates now here recruit themselves mostly from the East, the Balkans, Greece, Turkey and Egypt. But it is the American doctor they want. Professor Eiselberg congratulated me especially on the Wisconsin Medical Unit that was sent over at the beginning of the war and stayed until America entered. They took charge of a hospital and did very good work.

No doubt you all read about Professor Steinach's work on physiological regeneration. He is not a faker, but a highly scientific man, and much good may come from his work. As always, certain medical charlatans are taking the subject as finished and begin all over the world to discredit the scientific work by promiscuous advertising and operating.

I must tell you that I have been on a strike, yes, on a genuine strike. At Innsbruck all the doctors at the university went on a strike for a raise in their salaries. Their salaries up to then amounted to only a dollar or two a month in our values. They could not feed themselves and because the government would not listen they quit and stayed out for one week. And because I worked with them, I too was on the list of strikers. There was perfect sympathy between the doctors and the patients, the latter still getting the most necessary care. No operation except in emergency was performed. Only after those patients who could walk, paraded the city streets in the old torn gowns in a sympathy movement, did the government give in.

Theaters are going, and they with the cafes are well patronized, mostly by the profiteers. The "Prater," well known amusement place of Vienna, did a poor business this summer. In one little one-horse theater I saw a play by a semi-professional, whose chief stock in trade is to furnish as many realistic beheadings and executions of the villain as possible. The time I was there they beheaded the raw-neck so artistically, that the motley audience kept on applauding until they repeated the execution, and when the crowd still kept up the applause and would not cease the fellow was killed for the third time. Another time they tell me a mischievous person put sneezing powder under the "chopping-block." The victim got into a violent, continuous sneeze, in which the executioner, coming too close to the scene in his desire for investigation, joined most heartily. Of course, the mob was furious and, suspecting foul play, demanded that their money be returned.

Very truly yours,

FRANZ PFISTER.

NEWS ITEMS AND PERSONALS

Two dormitories at the Soldiers' Home, Milwaukee, are being rebuilt into a 150 bed hospital for sick and wounded soldiers of the World War. Two doctors will be added to the staff and the number of nurses increased from fourteen to thirty-five. Surgical and medical equipment is being installed and all variety of cases except tubercular and mental diseases will be treated there.

The annual meeting of the Berlin Hospital Association resulted in the election of all the former officers for the ensuing year. The past year has been a very successful one for the hospital, it having been self-supporting, and the records show that 235 patients were treated there during the year.

A farewell banquet was given for Dr. D. R. Ernst, superintendent, and Dr. W. B. Ford, assistant superintendent, of the Blue Mound Sanatorium, Milwaukee, December 30, in recognition of their retirement as heads of the institution on January first. The Sanatorium has been placed under the supervision of Dr. C. E. Ide, superintendent of Muirdale Sanatorium, Wauwatosa, as a county institution.

Dr. R. W. Blumenthal, Milwaukee, has been elected president of the staff of Emergency Hospital. Dr. Phil Rogers has been elected vice-president and Dr. H. W Powers, secretary.

The Commercial Club of Ripon has started agitation for a hospital there, of which, it is claimed, Ripon is sorely in need. Dr. W. C. Nason of Ripon has been elected as president of the club and Dr. J. S. Foat as vice-president.

The Egeland Hospital at Sturgeon Bay has been completed at a cost of $50,000. The hospital was opened to the public January 22nd, and a large reception held.

The salary of Dr. Charles Ide, recently appointed as superintendent of Muirdale Sanatorium, Wauwatosa,

was fixed at $3,500 annually, with maintenance, by the county board of supervisors.

A hospital benefit in the form of a carnival was given by the Western Malleable Social Club, Beaver Dam, and $471.42 was raised for the hospital.

The Physicians Radium Association of Wisconsin recently received an additional 200 Mgs. of Radium, making a total of 300 Mgs. now in its possession.

Twenty-three crippled children from the Sparta State Public School for Dependent Children are now receiving medical treatment at the Bradley Memorial Hospital at the University of Wisconsin. About 40 children have been cared for since last July when the hospital first began the work. This work for crippled children that is now being done is the first step in the activities that will be carried on in the new State General Hospital that is now being built on the university campus in conjunction with the medical school. Most of the children sent from Sparta are suffering from infantile paralysis.

John Till, the famous plaster doctor of Barron County, has been found guilty of practicing medicine without a license and has been sentenced to serve one year in the Barron County jail. He had been previously sentenced to six months in the county jail and was serving this sentence when he had his second trial and received a second sentence.

A new rule on smallpox quarantine was promulgated by the state board of health when the board met in annual session. Hereafter such quarantine will extend only to the smallpox patient when other members of the household are vaccinated. The rule means that although the patient shall be kept strictly isolated, others in the family may be at liberty to go and come provided they shall submit at once to vaccination.

Copies of articles of incorporation for the Wausau hospital have been filed with the register of deeds in that city. A non-stock, no dividend and no pecuniary profit plan will be followed and there will be no canvass for funds at the present time. The erection of a hospital will not be started until prices are right, it is stated.

The Sheppard-Towner bill whose provisions would give Wisconsin $20,000 for hospital accommodations, consultation clinics, and visiting nurses for public protection of mothers and infants, is analyzed in a circular sent out by the Wisconsin League of Women Voters urging every woman to familiarize herself with the provisions of the bill so she will understand its operation if it passes the house of representatives and becomes a law. The senate passed the bill on Dec. 18. The circular explains that the bill is "designed to put at the disposal of every mother adequate instruction in infant hygiene and household arts." "The federal government would provide $10,000 for each state, and in addition $2,000,000 to be apportioned among the states according to population, provided each state appropriates a like sum," according to the league. "This sum would gradually increase until it totals $4,000,000 annually."

About 1,200 physicians and health officers in about 460 Wisconsin towns sent 36,981 bacteriological specimens for diagnosis during the past two years to the central laboratory of hygiene conducted in Madison by the state board of health and the University of Wisconsin, according to figures just prepared. This number is an increase of about 5,479 specimens over the preceding biennium. A total of 53,810 specimens from Badger physicians was handled by the Madison laboratory, together with the five branch laboratories conducted at Kenosha, Oshkosh, Rhinelander, Superior, and Wausau between July 1, 1918, and July 1, 1920; although the last two laboratories were closed during half the period. Among the branch laboratories, Oshkosh led in number of diagnosis, with Superior and Rhinelander closely rivaling.

DEATHS

Dr. Carl Muth, Sr,. for many years a prominent physician and surgeon of Sheboygan, died at the home of his daughter-in-law at West Bend, January 12, after an illness of several weeks. Dr. Muth was born in Germany in 1842, and emigrated from there with his parents in 1847. After one year's residence near Cleveland, Ohio, they removed to Sheboygan. He graduated from Rush Medical College in 1868, and in 1873 he went abroad to take postgraduate work at the University of Goettingen, Germany, returning to Sheboygan where he practiced for a period of forty years.

Dr. Muth was a member of the Sheboygan County, Wisconsin State and American Medical Associations.

Dr. R. C. Teschan, Milwaukee, died at his home, February 1, 1921. Dr. Teschan was born in Basel, Switzerland, April 9, 1852, and graduated from the Detroit Medical College in 1883. He located in Milwaukee in 1888 where he practiced until the time of his death. He was a member of the Milwaukee County, Wisconsin State and American Medical Associations.

Dr. Jeremiah Donovan, Milwaukee, died at St. Joseph's Hospital, January 25, after a short illness. Dr. Donovan was born in 1865 and graduated from the Wisconsin College of Physicians and Surgeons in 1902. He practiced in Forestville for twelve years, coming to Milwaukee in 1916. He was instructor in Proctology at Marquette University up to the time of his death. He was a member of the Milwaukee County, Wisconsin State and American Medical Associations.

Dr. A. C. Rogers, 77 years of age, one of the oldest practitioners of Sheboygan County and a veteran of the Civil War, died at his home in Cascade, December 23. He was born in Cambridge, Maine, in 1843, removing with his parents to Lima, Wisconsin, in 1845. He graduated from the Iowa College of Physicians and Surgeons in 1879 and then located in Sheboygan where he practiced for five years. He then took up postgraduate studies at the completion of which he located in Cascade where he practiced until the time of his death.

A YEAR OF RED CROSS WORK.

More than fifteen thousand American communities were touched by the activities of the American Red Cross during the year ending June 30, 1920, according to the annual report of the organization covering that period.

During the year a Red Cross Department of Health Service has been organized; its Nursing Service has been extended to meet a growing demand for public health nursing until over 36,000 nurses are now on its rolls; its First Aid to Injured courses have been widely taught, 6,000 persons having been awarded First Aid certificates during the year; and the American Red Cross has been the chief factor in the formation of the League of Red Cross Societies with headquarters in Geneva.

The Department of Health service was established December 1, 1919. On June 30, 1920, there were in active operation 128 Health Centers, from which radiate innumerable activities designed to improve the health of the community, while 435 Red Cross Chapters were actively engaged in disease-preventive work.

The Bureau of First Aid to Injured was transferred from the Department of Military Relief to the Health Department January 1, 1920. In addition to the 6,000 certificates issued to those who had taken regular courses, 465 medals have been awarded, ten First Aid contests have taken place in various states, 1,500 medallions have been distributed and 775 junior members have been awarded emblems.

The Life-Saving, or Water First-Aid service has been extended the past year by the addition of twenty-nine Red Cross Life-Saving corps and the enrollment of 1,500 new members, of whom 503 are women. There is now a complete woman's corps in this branch of the service.

The Health Department also includes a Bureau of Medical Social service, which had under its supervision June 30, 1920, 312 Red Cross employes, serving 52 Public Health Hospitals. Of this number 125 are hospital social workers, and during the year, 30,422 patients have received from this Bureau some form of Red Cross service.

In the Department of Nursing the fiscal year was one of transition from military to civil activities. As the Red Cross has assigned 20,000 graduate nurses to war service, the Department of Nursing felt responsible for their proper return to civilian life, and to this end has conducted a bureau of information which has aided in placing at least 2,500 of those who have sought its aid. In this connection, also, the Red Cross appropriated $16,000 for the establishment of a convalescent home for sick nurses.

Of the 604 nurses attached to the various American Red Cross commissions in Europe when the armistice was signed, all but 116 had returned to the United States by June 30, 1920. Of these 66 were in Poland, 46 in the Balkans, 2 in France, and 2 in Bohemia. Six scholarships to prepare nurses for foreign service have been established at King's College.

Enrollment in the Red Cross nursing service increased during the year from 35,426 to 36,705. On June 30 there were in active service 504 in the Army, 321 in the Navy and 943 in the Public Health corps.

In order to increase the number of qualified public health nurses, for which there is urgent demand, 288 scholarships have been established and 67 loans have been made from the National Fund to public health nursing, the Metropolitan Chapter of Boston alone appropriating a fund sufficient for 60, while the New York County Chapter appropriated $20,000 toward the preparation of Public Health nurses at the Henry Street Settlement. Funds have also been given to the University of Minnesota, Peabody College, Tulane University, University of Louisville, and University of California.

Development in class instruction in Home Hygiene and Care of the Sick has increased three-fold during the fiscal year, the number having increased from 34,033 to 93,093. During June, 1920, 2,090 nurse instructors were conducting classes in this branch of work.

Activities of the Bureau of Nutrition Service include the maintenance of a reserve of home economics, women qualified and ready to serve in the event of war, and the promotion of the course of instruction in food selection, nutrition classes for undernourished children and the hot school lunch. During the year 2,387 enrolled in this service, 509 as hospital dietitians and 1,878 as instructors. During the fiscal year a text-book upon this line of work has been issued and 1,486 students have been certified.

During the year the Red Cross has also cooperated closely with other national organizations to recruit student nurses for Public Health work, so vital is the demand.

The expenses of the nursing service for the fiscal year amounted to $129,965.92, a reduction of $48,371.29 over the previous year.

One of the important results of the work done by the Red Cross Health and Nursing Departments has been that 35 states have practically adopted a uniform method of working in connection with the Red Cross, whereby a bureau of public health nursing has been instituted under the direction of the State Public Health officer.

The part which the American Red Cross took in the organization of the League of Red Cross Societies was purely educational; but in this way it blazed the trail for the League, which aims to extend the distress preventive and constructive brotherhood throughout the world. At the first conference held in Geneva, at which representatives were present from 28 countries, it was decided to adopt the methods which have been worked out by the American Red Cross as the plan to be followed by all.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Practical Preventive Medicine. By Mark F. Boyd, M. D., C. P. H., Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Octavo volue of 352 pages with 135 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.00 net.

Basal Metabolic Rate Determinations. By Walter M. Boothby, M. D., and Irene Sandiford, Ph. D. Section on Clinical Metabolism. The Mayo Clinic, Rochester, Minn., and The Mayo Foundation, University of Minnesota. Octavo volume of 117 pages with 11 Tables and Charts of explanation. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $5.00 net.

A Manual of Pathology. By Guthrie McConnell, M. D., Associate in Pathology Western Reserve University, Medical School, Cleveland, O. Fourth Edition. Thoroughly Revised. 12mo volume of 611 pages, with 18 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $4.50 net.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph. D., M. D., Professor of Pathology in the University of Chicago, and in the Rush Medical College, Chicago. Fourth Edition. Revised and Reset. Octavo of 695 pages. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $7.00 net.

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S. Fourth Edition. Revised and Enlarged. 800 engravings. St. Louis: C. V. Mosby & Co. 1919.

Man's Unconscious Passion. By Wilfred Lay, Ph.D. New York: Dodd, Mead & Co. 1920.

Regional Anaesthesia. By H. Sherwood Dunn, M. D. 24 figures in the text. Philadelphia: F. A. Davis Co. 1920.

Psycho-Pathology. By Edward J. Kempf, Clinical Psychologist to St. Elizabeth's Hospital, Washington, D. C. 87 illustrations. St. Louis: C. V. Mosby Co. 1920. Price, $9.50.

The History of the American Red Cross in Italy. By Charles M. Bakewell, M. D. New York: The MacMillan Co. 1920.

Old at Forty or Young at Sixty. By Robt. S. Carroll, M. D. New York: The MacMillan Co. 1920.

Diabetes. By Philip Horowitz, M. D. 27 illustrations. 2 color plates. New York: Paul B. Hoeber. 1920. Price, $2.00.

Sex and Life. By W. F. Roby, M. D. Richard G. Badger: The Gorham Press, Boston. 1920.

Sleep Walking and Moon Walking. A Medico-Literary Study, by Dr. J. Sadger, Vienna. Washington, D. C.: Nervous and Mental Disease Publishing Co. 1920.

The Radiography of the Chest. Vol I. Pulmonary Tuberculosis, with 9 line diagrams and 99 radiograms. By Walter Overend, M. D. St. Louis: C. V. Mosby Co. 1920. Price, $5.00.

Hygiene of Communicable Diseases. By Francis M. Munson, M. D. Illustrated. New York: Paul B. Hoeber. 1920. Price, $5.50.

The Endocrines. By Samuel Wyllis Bandler, M. D., F. A. C. S., Professor of Gynecology in the New York Post-Graduate School and Hospital. Octavo of 486 pages Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $7.00 net.

1919 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1,331 pages, 490 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, $12.00 net.

Hygiene: Dental and General. By Turner. St. Louis: C. V. Mosby Co. 1920.

Physiology and Biochemistry in Modern Medicine. By J. J R. Macleod, M. D. Third Edition. St. Louis: C. V. Mosby Co. 1920.

The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russel D. Carman, M. D., Head of Section of Roentgenology in the Division of Medicine, Mayo Clinic and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota. Second edition, thoroughly revised. Octavo of 676 pages with 626 original illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $8.50 net.

A Laboratory Manual and Text-Book of Embryology. By Charles W. Prentiss, Late Professor of Microscopic Anatomy, Northwestern University Medical School, Chicago. Revised and rewritten by Leslie B. Arey, Professor of Microscopic Anatomy, Northwestern University Medical School. Third edition, enlarged. Octavo volume of 412 pages with 388 illustrations, many in color. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $5.50 net.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine Graduate School of Medicine, University of Pennsylvania. Fourteenth edition, thoroughly revised with the assistance of John H. Musser, Jr., M. D., Associate in Medicine, University of Pennsylvania. Octavo of 1,284 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $10.00 net.

The Practical Medicine Series. Under the general editorial charge of Charles L. Mix, A. M., M. D., 304 S. Dearborn St., Chicago: The Year Book Publishers. **Vol. II. General Surgery.** Edited by Albert J. Ochsner, M. D., F. A. C. S. 620 pages, illustrated. Price, $2.50. **Vol. III. The Eye, Ear, Nose and Throat.** Edited by Casey A. Wood, M. D., Albert H. Andrews, M. D., and Geo. E. Shambaugh, M. D. 380 pages, illustrated. Price, $1.75. **Vol. IV. Pediatrics.** Edited by Isaac A. Abt, and **Orthopedic Surgery,** edited by Edw. W. Ryerson, M. D. 256 pages, illustrated. Price, $1.75.

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Pulmonary Tuberculosis. Handbook for Students and Practitioners. By Edward O. Otis, A. B., M. D. Second edition. W. M. Leonnard Co., Boston. 1920. Price, $3.50.

Dr. Otis' first work which appeared in 1917 and which was one of the well known "case history series" has been enlarged and rewritten. It is a book intended for both the physician and patient and in it Dr. Otis has combined the material each should know. It is one of few medical books which can be read intelligently by the lay reader.

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The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russell D. Carman, M. D., Mayo Clinic. Second edition thoroughly revised. Octavo of 676 pages. 626 original illustrations. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $8.50 net.

Dr. Carman has brought the subject matter of his work thoroughly up to date in his second edition. It has been enlarged by 98 pages, 122 illustrations and many protocols. His new chapter on Hour-glass Stomach, and another on Chronologic Abstract of the Subject of Pneumo-peritoneal Diagnosis of Abdominal Lesions have been added.

Dr. Carman is to be again congratulated on the best work on the subject. It is beautifully printed, wonderfully illustrated and should certainly be in the hands of everyone doing X-ray work.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine Graduate School of Medicine, Univ. of Pa. 14th edition, thoroughly revised, with the assistance of John H. Musser, Jr., M. D., Associate in Medicine, Univ. of Pa. Octavo of 1284 pages, fully illustrated. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $10.00 net.

Dr. Anders' text-book on practice of medicine has become a classic and the fact that it has reached the 14th edition attests its popularity better than any words that could be written in a book review department.

In re-arranging and bringing the work up to date this year, he has had the assistance of John H. Musser, Jr. In the new work, certain sections which are no longer of such importance as formerly have been abbreviated, while on the other hand, the description of numerous diseases—not a few of which were prevalent during the world war, have been amplified because of the importance of newly developed facts. Of special interest is the section on diseases of the heart in which certain definite criteria which determine the presence or absence of true valvular disease have been presented in a new way. Various types of heart block as determined by the electrocardiograph are discussed from the clinical standpoint.

The section on influenza has been entirely rewritten, based on the studies and experiences of the recent pandemic. Dr. Anders' delightful treatment of differential diagnosis and treatment again characterize his work. Those interested in a new or more up to date practice of medicine can do no better than order this volume now.

A Laboratory Manual and Text-Book of Embryology. By Charles W. Prentiss. Revised and rewritten by Leslie B. Arey. Third edition, enlarged. Octavo volume of 412 pages. 388 illustrations, many in color. W. B. Saunders Co., Philadelphia and London. 1920. Cloth, $5.50 net.

This revised and rewritten book on Embryology by Charles W. Prentiss, now appearing in a third edition, is a laboratory manual and text-book combined. Leslie Brainnard Arey has done well in perpetuating this splendid text of the late Professor Prentiss. The general plan and scope of the work remains unchanged although the actual descriptions have been extensively rewritten and re-arranged. A new chapter on the morphogenesis of the skeleton and muscles covers briefly a subject not included in the previous edition and forty illustrations replace or supplement certain of those which appeared in the first edition. Much new material has been added.

The authors have succeeded in presenting a text and laboratory manual in which descriptions are clear and consistent. They are also to be complimented on the brevity with which the subject matter is treated. The work is beautifully illustrated, many of the plates are in colors, and it is recommended as a standard text on the subject.

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ORIGINAL ARTICLES

THE SPECIAL FIELD OF NEUROLOGICAL SURGERY AFTER ANOTHER INTERVAL.*

BY HARVEY CUSHING, M. D.,

SURGEON-IN-CHIEF, THE PETER BENT BRIGHAM HOSPITAL.

BOSTON, MASS.

Individuals engaged in scientific or professional pursuits have need of a periodical accounting of stock no less than those engaged in business. The results of such an inventory may sometimes be of more than personal interest, especially when projects have been undertaken which are in a measure novel or special, for their success or failure may encourage others or may deter them from similar adventures.

SPECIALIZATION IN GENERAL.

In a sense, I suppose, every medical graduate tends in time to particularize to a certain extent, and through liking or opportunity comes to be known as more expert or better informed than his fellows in one thing or another. He may have had an unusual experience in relation to childbirth, shown unusual skill in dealing with the ailments of children or with the maladies to which their mothers are heir. He may have a mechanical bent and be particularly apt as a setter of broken bones or a corrector of deformities. He may be a particularly good microscopist or show greater facility than his contemporaries in the use of some other precise instrument of importance in diagnosis. He may have become engrossed in some special disease, indeed of some particular organ, or what is more, of some special form of treatment for a particular disease of a particular organ. His interests may become purely scientific or purely sociological and take him away from the bedside entirely. Of all this there is no end or ever will there be. For there are ways innumerable in science or practice in which we as individuals or groups of individuals come to particularize in our work.

The participant in this subtle process of specialization may not be always conscious of it, or, if so, may not wish to admit the fact even to himself and would encourage his employers, be they trustees, patients or the Commonwealth, that he is equally capable of dealing with all branches of his larger subject. On the other hand, the concentration of effort may be intentional and represent a desire to contribute to knowledge, rather than income, though they are not necessarily divorced, and for this the individual must perfect himself in certain directions rather than others.

Thus the specialist and specialties arise, but in the case of each of them, should progress cease after a generation or two, it is inevitable that the imitators of the pioneers will diminish in number as well as quality. And when this time comes, following a period of more or less disrepute, the particular species of specialist dies out, and the prodigal specialty returns to, or should return to, its parents. If this happens, the reunited household will unquestionably have profited by the episode.

Medicine has grown in the fashion of a Banian tree. In the beginning there was a single stem. This, in the remote past, each professional aspirant learned to climb, and in his lifetime could encompass without difficulty all the knowledge its various branches represented. But from the main branches which the original tree put out, particularly from physic and surgery representing the application of medical knowledge to practice, there soon dangled many roots. Some of these finally reaching the ground became attached, and drawing up their own nourishment have in some cases enlarged and become permanent and necessary supports to the parent branches.

Modern aspirants sometimes climb these outlying props, mistaking them for the main stem or believing that they have found a short and less crowded way to the top where others they wish to emulate are seen to perch. The temptation is

*This address was made to do double duty before the Tri-State Medical Society, at Waterloo, Iowa, Oct. 7th, and the Cleveland Academy of Medicine, Oct. 8th, 1920.

great and to some irresistible, but short cuts to specialization without thorough preparation in the fundamentals make incompetent if not dangerous practitioners, and so long as this is permitted within the profession itself we should be less tolerant of those who have smuggled themselves into the tree with no medical preparation whatsoever—the osteopath perched insecurely on a limb propped by massage and the Christian scientist tip-toe on another feebly supported by psychotherapy.

Be this as it may, in time there has come to be a veritable grove of trunks and every season new roots become grounded in such increasing numbers it is difficult for the untutored to realize that the growth really represents a single tree. To be sure, an outlying prop to a limb may occasionally dwindle and disappear as botany has disappeared; or after a period of temporary vigor it may become incorporated with an adjacent and more vigorous one, but the general tendency is for a further and rapid multiplication rather than for any reduction in number, for, though no longer needed, an old prop dies reluctantly if once it has come to support an important branch.

Near the centre of the tree are two particularly large parent branches, one of them perhaps more flourishing and well supported of late than the other, but both of them apparently essential to the welfare of the tree. From legend alone do we learn which of the two probably represents the main stem and which the secondary offshoot. Whether physic was a specialty which branched off from General Medicine before surgery, or surgery before physic, is not quite clear.

In its westerly transplantation to different countries in successive eras the tree of medicine to be sure has not always put out the same branches in the same way. We may recall the words of the distinguished Philadelphian, John Morgan, who in 1765 on his return from Edinburgh announced in his justly celebrated Discourse his intention of limiting himself henceforth to "those cases which belong most immediately to the office of a Physician" and of no longer "interfering in the proper business of Surgery." From this it could be argued that the practice of physic thus withdrawn from General Medicine, which included handicraft, became in this country at least the first avowed specialty. For the real standard of specialization is the determination to avoid diffuseness by withdrawing from participation in the wider field and devoting oneself to a more limited one.

One might pursue this subject further and trace the development of some of the various secondary offshoots both of physic and surgery in the past and see what has happened to them—whether they have taken secure root and continued to flourish or whether after a generation or two they have either died back or become incorporated again with one of the main stems by fusion—but interesting as this might be it is not the purpose of this essay.

New specialties at present undreamt of will continue to arise. It takes little to start one. The diseases incidental to a novel occupation like aviation, the introduction into the clinic of a new discovery, like Wassermann's reaction, or Röntgen's Ray; a new instrument of precision like the calorimeter—such things as these will make a succession for all time of unlooked for opportunities for us and our followers in medicine to engage in new endeavors under novel conditions.

These must be regarded as accidental occasions for specialization, to be distinguished perhaps from the purposeful determination to specialize within an established branch long occupied. But under both circumstances those who can best take advantage of existing opportunities or can originate others, not only must have had a good general training in medicine and surgery, but must have been thoroughly schooled in the fundamental subjects—in the anatomy, physiology and chemistry of morbid as well as of normal tissues and organs, for without these things any special branch is supported by a root lodged in sand which does not long survive overloading. There is only one way to get a secure seat on any outlying branch and that is by approaching it from the main stem, no matter how wearisome, laborious and time-consuming this process may be.

SPECIALIZATION IN PARTICULAR.

In 1905[1] and again in 1910[2] a paper was read before the Cleveland Academy of Medicine under

1. The Special Field of Neurological Surgery, Cleveland Med. Jour., Jan., 1905, iv, 1-13; also Johns Hopkins Hosp. Bull., Mar., 1905, xvi, 77-87.

2. The Special Field of Neurological Surgery: Five Years Later. Cleveland Med. Jour., Nov., 1910, ix, 827-863; also Johns Hopkins Hosp. Bull., Nov., 1910, xxi, 325-339.

this selfsame subject of Neurological Surgery as a specialty. The first of them was written shortly after the decision was made to limit my operative surgical work to what seemed to my several advisers, and indeed to me at the time, to offer small pickings. There had dangled for long from the branch of surgery, if we may continue with our Banian-tree simile, a wisp of root over a very unpromising patch of soil. It had become attached on more than one occasion, though feebly to be sure and tested thoroughly by Agnew in this country and later by von Bergmann in Germany, it had for reasons not far to seek been abandoned as both unfruitful and unsafe. Later on, Victor Horsley turned his brilliant mind to the subject with far greater success than his predecessors, though he showed more interest and perhaps skill in its physiological than in its purely surgical aspects.[3] Specialization is an uncompromising mistress. It was an avocation of Horsley's, not a subject to which he limited himself, and though he had imitators he left no disciples.

It hardly seemed possible fifteen years ago that the surgery of the nervous system by itself could furnish material enough to occupy a surgeon's undivided attention and insure him a livelihood, far less that it would promise opportunities within itself for further specialization on subjects like tumors of the brain in general or tumors of the pituitary body in particular. Time has shown indeed that these early misgivings were unfounded, and that there is not only an appeal but abundant opportunity for special workers who plan to restrict themselves to this outlying branch is evidenced by the fact that a number of surgeons interested in the nervous system have organized themselves into an Interurban Neuro-surgical Society in the expectation thereby of making more rapid progress in this specialty through an intimate interchange of opinions made possible by clinical meetings.

It is impossible within the limits of an address to enter at all fully into an account of all that has transpired in the field of neurological surgery during the past decade, far less to give anything more than hints of what lies before us in the way of problems. I shall restrict myself, largely, to some of the topics which have engrossed the attention of my coworkers and myself during the interval, though they represent but a small portion of the larger work in which many have become engaged.

To conform more or less to the plan of my former papers I shall allude in turn to the surgery of the brain, the cord and the peripheral (cranial and spinal) nerves,[4] with such comment and digressions as I may be led into under these separate headings. But before entering on these subjects I desire to say something about a mysterious personal quality necessarily possessed in varying degrees of perfection by everyone who does something with his hands—namely his technique.

Neuro-Surgical Technique. Perfection in the conduct of his therapeutic measures is as essential for a surgeon as is the technique of laying on colors for an artist or of producing sound for a musician. One may have abundant knowledge of art or music or medicine and yet be a poor performer. In surgery a proper technique is by no means the only element of success but it is an important one.

Let us look back for a moment on the conditions at the beginning of the century, when from our present standards the methods of conducting both cranial and spinal operations were crude beyond the belief of our juniors who happily know better times. The day of the mallet and chisel for opening the skull was not far removed. An exploratory exposure of the brain was looked upon by the prospective patient with the same dread with which an abdominal operation had been regarded a generation before, and by the surgeon with com-

3. One of his colleagues, indeed, at the National Hospital went so far as to make a study of the brain tumor cases operated upon there, and concluded that the average duration of life of patients thus afflicted was longer than with an operation.

4. There is, too, a surgery of the sympathetic nervous system, poorly developed it is true and hardly recognizable even in this its experimental stage. We have had glimpses of it in certain operations for goiter, in certain forms of treatment suggested for Reynaud's disease, and the proposals by Leriche, in regard to a purposeful surgical paralysis of the vaso-constrictor nerves which accompany the blood vessels, are straws to show the direction of the wind.

The influence of the vagus and the splanchnic nerves upon the viscera; the relation of emotional states to metabolic stability; Cannon's experimental anastomoses between phrenic and cervical sympathetic, with their remarkable sequel—these things indicate what may lie before us if imagination is turned to the application of some of the facts known to physiologists regarding the automatic nervous system.

parable misgivings. Few if any operators ventured to undertake one of these procedures except under the direction of a neurologist, and only then when conditions had advanced to such a point that the diagnosis could be made beyond peradventure, though by this time, alas, in the presence of tumor, tension within the skull had become extreme. This made a procedure with inherent technical difficulties extremely hazardous, not alone, at the moment of its performance but the ensuing complications due to imperfect and hasty closures led with disheartening frequency to complications which sometimes prolonged an existence worse than the original disease.

The most crying need, therefore, in the early years of the century was for an improvement of our technical methods under the realization that what had sufficed for other organs and tissues when applied to the surgery of the nervous system was disastrous. Therein lay the failure of Agnew and von Bergmann.

Fifteen years ago we were scarcely at the dawn of an understanding of purposeful decompression for brain tumors. To be sure, the observation had been made and reported more than once that after an occasional osteoplastic exploration which either revealed no growth, or one supposedly unremovable, an entirely unexpected amelioration of subjective symptoms had taken place. However, inasmuch as most of these early operations had been confined to the more accessible central region of the hemisphere, these subjective benefits were more than offset by post-operative paralyses from protrusion of the tense brain through the cranial defect. When the idea of a purposeful decompression over relatively "silent" portions of the brain, conducted, moreover, in areas like the temporal and suboccipital regions where an undue extent of protrusion is checked by securely closed extracranial muscles—when this idea finally took hold, the old explorations which had resulted in a certain measure or relief were resurrected and tabulated as decompressions in our modern sense, which they were not either in reality or intent.

With the development of a reasonably safe and satisfactory procedure for relieving tension both for cerebral and cerebellar lesions, and one which of itself did not lead to paralysis, these palliative operations began to multiply and it soon became apparent to all that the accepted views regarding the cause of what was called optic neuritis resulting in atrophy and blindness in tumor cases would have to be revised. For it was obvious that an inflammation of the nerve could not explain a process capable of being checked by the mere relief of pressure, so long as the tumor, to which the supposedly toxic neuritis had commonly been ascribed, remained unremoved.

Inflammations of the optic nerves due to toxic substances and capable of producing atrophy doubtless exist, but changes in the nerve head observable to the ophthalmoscope are infinitely more often due either to an increase of cerebrospinal fluid tension or to direct pressure on the nerve by tumors in the region of the chiasm than to any other cause—so much more often that rhinologists and ophthalmologists must needs pause before venturing to make the popular diagnoses of the day which lead so often to unnecessary operations on the accessory sinuses.

I cannot speak for others, but for myself the subtemporal and the suboccipital operations are, in the long run, the two most useful procedures in cranio-cerebral surgery though, as is true of all operations, they are by no means perfected and there are right and wrong ways of performing them.[5]

The *subtemporal decompression* I would place first on the list. It may be employed as a temporizing measure even in the presence of a localizable lesion, but it is of chief value in all unlocalizable cerebral tumors. Naturally, since the bone defect is made purposefully over the relatively silent temporal lobe, the growth may at times be unexpectedly disclosed. In the presence, moreover, of a questionable cerebellar lesion, the existing symptoms being hardly such as to justify the more elaborate and difficult posterior exposure, the measure may be used as an aid to diagnosis. For the existence of an obstructive hydrocephalus can be determined under these circumstances by a puncture of the temporal horn of the lateral ventricle, a matter of considerable localizing value

5. I would have felt ere this that the principles of a sub-temporal decompression were so well understood that it was a safe measure in the hands of every general surgeon, but we still see so many flaps elevated in the region of the temporal attachment and often on the left side, that the happy time does not seem to have come as yet. A detailed account of the measure, long delayed in publication, has just appeared in the Textbook of Surgical Diagnosis and Treatment, by American Authors, Ed. by A. J. Ochsner, 1920, i, 407-448.

though it is to be admitted that in the presence of a hydrocephalus a decompression over the cerebrum gives but slight pressure relief.

The routine operation which may be regarded as of second importance is the *combined osteoplastic exploration and decompression.* With the boneflap so placed that its base is in the temporal region, the squamous wing of the temporal bone may be rongeured away after the flap is reflected. Though surgeons in the past have sacrified without hesitation large portions of the calvarium in eradicating tumors, and occasionally this may be necessary even now, yet it is highly desirable that the cranial chamber should be kept as intact as one's skill and the conditions permit. It is also desirable for many reasons that an operation for tumor should be conducted whenever possible in a single session, and the old two-stage performances, provided there is careful blood-stilling, are less and less frequently called for.[6]

The third procedure, the *typical cerebellar exposure,* is a still more difficult operation and necessitates elaborate preparations and skilful teamwork if a long series of these measures is to be carried through with a minimal mortality. In this performance the steps are practically the same, whether it resolves itself into a decompression or in the more or less complete removal of a tumor should one be disclosed. It is a long two-hour operation at best—an hour for the full exposure and another for wound closure—but when tension is great, when there is threatened respiratory difficulty so that a ventricular puncture in the course of the early stages is called for, or when there is a recess tumor which requires long and careful manipulations, or a tumor of the mid line which necessitates removal of the arch of the atlas and prolongation of the dural incision down over the spinal canal as far as the axis, the performance may well require an extra hour or two.

Since the war, influenced by DeMartel's experiences as well as by our own, I have made a few of these cerebellar exposures under a local anesthetic, and though it is possible, I do not feel that I can do quite as perfect an operation in this way as when the patient is etherized, even though this in itself adds an element of danger. Under a local anesthetic the long seance becomes still more protracted, and by the time the patient begins to ask if you are not nearly through one can hardly resist the temptation to exceed his established speed limit, to cut corners and thereby pave the way for accidents.

These then are the three standard types of operation, though there are innumerable modifications of them. Each surgeon in accordance with his particular training and tastes will have devices of various kinds to overcome difficulties as they arise. These technical idiosyncrasies do not affect the three main issues—the exposure of the lesion, its safe and proper handling, the painstaking closure necessary for a wound which may subsequently be subjected to considerable tension.

I have emphasized before, and must emphasize again, that there is no field of surgery in which fastidiousness is more essential to success. Imperfections in technique in the course of operations on other parts of the body where other tissues than those of the central nervous system are concerned may delay the recovery but not necessarily impair an end result. But corresponding slips which compromise the function of the nervous system may sometimes leave mental or other disturbances

6. When a tumor extirpation is anticipated, as in the case of a large endothelioma, a two-stage operation admittedly continues to be often required, for there is apt to be undue loss of blood during the elevation of the flap, and there is almost certain to be still more in a certain stage of dislodging the tumor. Under these circumstances I feel that a dural opening at the first session should be limited to the temporal region to allow a protrusion in correspondence with the subtemporal defect—in other words, with the area of bone rongeured away from under the temporal muscle. This will permit the upper portion of the flap to be replaced over an intact dura to await a second session, a certain measure of pressure relief being meanwhile secured. Should the dura be widely reflected at the first session and the tumor exposed with the inevitable protrusion of the hemisphere, this would make one of two things necessary—either an immediate attempt at tumor extirpation which might be more than the patient could stand, or stripping off the reflected area of bone and replacement of the scalp alone, a procedure which leaves an unnecessarily large cranial defect. One may be occasionally compelled by poor judgment or force of circumstances to accept one or another of these awkward situations.

7. A neurologist who recently had the endurance to see an acoustic tumor operation carried through on one of his patients to its conclusion with detailed wound closure, layer by layer, suddenly exclaimed: "I see now why my patients who have recovered heretofore after cerebellar operations have all had bulging necks. I had come to think it inevitable."

which are irrecoverable and to which death is preferable.

The surgeon who feels a due sense of responsibility regarding these difficult cases and would reduce postoperative deformities and accidents to the minimum must often put all the reserve he has into a single operation. Without injustice to the patients more than one stereotyped measure like a trigeminal root avulsion or subtemporal decompression may be undertaken in a single morning, but in the case of the more arduous and uncertain procedures the physical strain and responsibility may be such that he would be foolhardy and negligent of his patients' welfare who would venture upon a succession of these tasks.

Then, too, there is no group of patients who require a more detailed preoperative study, in which I feel that the surgeon is obligated to engage, and this with attention to laboratory studies which, in a new specialty are particularly to be encouraged, is about all that can be properly attended to. It is not the number of cases operated upon which has made contributions in surgery possible, but the detailed and careful analysis of the few, in conjunction with allied laboratory investigations.

Surgical technique may seem to be a thing entirely apart from the bedside study of patients preliminary to operation and from coincidental investigations in the laboratory.[8] In a certain sense it is a thing apart and we are all familiar with the men whose operative technique exceeds their judgments as to when it should be put to use. We have all known, too, surgeons who were somewhat awkward craftsmen but who possessed such a thorough knowledge of disease and its processes as to completely atone for their possible lack of manual dexterity. Of the two, the latter are often the more safe. Surgeons with both qualities highly developed are, alas, not a common breed. The patient, unfortunately, though he pays admission, has not the privilege of viewing the performance else he might like to see his appendix removed with a flourish and to applause. His active interest begins when the curtain falls and he is then apt to find himself more comfortable if the audience thought it a tedious and dull show.

In the manufacturing arts, particularly in this country of ours, subdivision of labor has developed to such an extent that no workman makes a completed object. He may excel in the rapidity with which he may drive rivets, in the skill with which he may attach a given piece to an article, of whose remaining parts he has little knowledge and less interest. It is possible in this way, doubtless, to make a greater number of these articles and hence, if they are to be sold, to insure a greater remuneration for someone, but it does not add to the happiness or satisfaction of the artisans. On the con-

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8. Though there may be difference of opinion in the matter, I, personally, feel that for the development of surgical technique no place is comparable to the experimental laboratory, and I feel that every young surgeon should begin to acquire his operative training in a series of operations on the lower animals. Certainly in the case of neurological operations one should learn on the lower animals the art of trephining, of the use of bone wax, of handling the cord and brain without the production of contusions and extravasations, of dealing with the cerebrospinal fluid which is the keynote of many intracranial operations. The most clever, neat and skilful of the younger generation of neuro-surgeons in the country, whom I have seen at work, have learned their surgery of the nervous system in this way. It has the double advantage of giving them a sufficient laboratory experience to enable them subsequently to pursue to the only place they are likely to be solved some of the many problems which arise. It was fortunate in my own case, and in that of my early co-workers in Baltimore, that the Hunterian Laboratory was available for this purpose. But with all this concerning the technique of operations we must not forget that there is a technique of examinations, and that a thorough, orderly and well conducted neurological study of a patient which demands the use of many instruments of precision necessary for tests of the special sense organs, is an art in itself. The examination of the eye is unquestionably the most important of all, and without the ophthalmoscope we would be quite helpless.

But in matters of localization, the perimeter is of even greater value. In the series of papers (of which one or two are still to appear) on the Fields of Vision in Cases of Brain Tumor, published successively by Drs. George J. Heuer, James Bordley, Jr., and Clifford B. Walker, we fell into an unquestioned error in relation to peripheral interlacing of the color fields. These observations were due to inexperience, and with the highly perfected methods developed by Dr. Walker corresponding field changes were no longer observed. They were due partly to an imperfect technique but more to erroneous interpretations of the responses of inattentive and easily fatigued patients. Naturally, therefore, color interlacing was found to disappear after operation.

Our faulty observation need perhaps not be greatly lamented for it unquestionably served to reactivate interest in perimetry which before that time, in clinics other than ophthalmological ones, was rarely employed and then only for gross defects.

trary it deprives him of the supreme satisfaction of creating something from the bottom up in which though an artisan he comes to take artistic pride.

This is one of the underlying sources of the unrest and dissatisfaction of the laborer. There is something of this tendency in surgery today. Ten or more goiters or hernias treated, or appendices removed, in a morning is not an uncommon record, but none of them are completed in a thoroughgoing sense by one person—the chief surgeon may spend but a few moments at the task, the more essential moments to be sure—and it is remunerative, but it puts him on the basis of that form of specialist whose sole task is to give the final adjustment to the carburetor as a succession of newly-assembled motor cars pass him by. This, I do not believe, leads either to real satisfaction in one's professional work nor to the greatest excellence in its quality.

It was said of Godfrey Kneller, who painted portraits innumerable, that he only did the faces —others in his studio particularly skilled at portraying hands and wigs and gowns filled in the rest of the picture. The quantity was great and the canvasses show it.

THE BRAIN AND ITS ENVELOPES.

Tumors. I find that in the report of 1905 no mention is made of the number of cases which up to that time had been operated upon. There had been very few—twenty-nine to be exact—with no instance of a really successful tumor extirpation. The principles of decompression were under discussion, and at the time it was the common practice of physicians with a brain tumor suspect—and the diagnosis was not often ventured upon—to prescribe a prolonged course of antileutic treatment before considering an operation. It was not until two years later, be it remembered, that the Wassermann reaction was introduced, nor was it perfected by Noguchi till 1911; but even this did not entirely remove this source of delay, for as late as 1913, at the last International Medical Congress, Horsley felt impelled to urgently protest against this form of delay which today must be combatted but fortunately this one has been eliminated.

In the early days, though palliative measures brought temporary relief to many, actual recoveries after tumor extirpation were exceedingly few. There were many discouragements even on the side of the temporary alleviation of symptoms, for many patients were in the terminal stages, a large proportion of them blind, or so nearly so that blindness ensued despite a thorough decompression. Then, too, the conditions found at autopsy in fatal cases were such as to make it seem that if cures were ever possible they would certainly be so few and far between as to hardly justify the expenditure of such labor.

Curiously enough, looking back on this early series, the first two patients who appear to have been actually cured, if one may use this term critically, both had cerebellar gliomas, and were operated upon in 1908. One of them was a small boy of 13 years, with a gliomatous cyst twice operated upon, the last time three years later with what appears to have been a successful destruction of the cyst wall. His functional recovery was perfect. He subsequently became captain of his school football team and now, nearly thirteen years later, is married, the father of a family, and regards himself as perfectly well. The other was a young man of 28, with a large glioma removed from the left hemisphere. Except for a slight impairment of vision in one eye on the recession of his choked disks, his recovery seems to have been complete, as may be appreciated from the contents of a recent letter sent me on the twelfth anniversary of his operation:

. . . "Being 39 years old, married, and with two children besides other dependents, I did not feel as though I could be spared from home and so instead of enlisting in 1917, I went with the Bartlett Hayward Company, who had contracts for making shrapnel shells. My particular work was making a part of the 155 mm. shell. I had to read micrometers to the one-thousandth of an inch, and if I had had to depend on my left eye I could not have done it, for it was already affected before the tumor was removed, as your old charts will show, but the other is normal and good enough for two. I was able to stand the hard work with the best of them though I had the 'flu' and penumonia, as did lots of others. . . ."

One would have thought that the initial successors would have been in extirpations of benign tumors like the endotheliomas or possibly acoustic neuromas. To be sure, the first reasonably successful operation for an acoustic neuroma—a case reported by Allan Starr—dates back nearly as far, namely to 1909, and though she remains reasonably well the degree of functional recovery is by no means perfect, for though these recess tumors are benign they present exceedingly difficult surgical problems.

Doubtless in the earlier series many endotheliomas were overlooked, for, concealed as they are apt to be between the hemispheres with but little surface evidence of their presence, they are difficult to expose—at least I can only account for their present proportional prevalence by this assumption. It was not until 1910, shortly before the reading of my second paper, that I had my first really successful endothelioma extirpation with a perfect result, in a man who since that time has taken an active part in national affairs.

Though in 1910 there were only 180 tumor cases in the series, they nevertheless were beginning to appear in increasing numbers and have now become so many as to necessitate limiting the number under observation at a given time. All told, in the Baltimore series there were 330 cases up to the fall of 1912, and since then the series of 735 cases observed at the Brigham Hospital to September 1st brings the number well above 1,000. One hundred examples of a given lesion each year provides as much material as can well be studied, and one must check the tendency to accept more than can be digested. It was far easier to comment ten years ago on 180 cases of presumed tumor than today upon 1,000.

Brain tumors are common—far more so than I believed to be the case when this same statement was made fifteen and again ten years ago. The time has come when we can no longer afford to group them together as a class any more than we can group all abdominal tumors together and make a composite report upon them which is at all worth while. We must take tumors in certain situations or, better still, tumors of certain kinds in certain situations, and give them special study. I have attempted to do this in a monograph dealing with the acoustic neuromas of which there have now been 45 verified cases, and feel that such a group-plan is the only way really to advance the subject. I shall hope ere long to follow it with a similar report on a series of some sixty verified endotheliomas which represent a particularly interesting type of intracranial tumor.

Tumor Classification. It is an Irishism to say that other conditions sometimes resemble tumor more closely than tumor does itself. I mean by this that some of our most favorable examples of tumor are ones in which the classical symptomatic triad of headache, vomiting and choked disk is completely wanting, though all three would doubtless have appeared in time. On the other hand, many patients are admitted to the clinic with a presumptive diagnosis of tumor, of the presence of which, nevertheless, we are often extremely doubtful despite the full-blown classical phenomena.

We have come therefore to classify the cases, 1 as *tumors certified* (or verified) only when the diagnosis has been confirmed and the type of tumor identified by histological examinations of tissue secured either at operation or autopsy,[9] 2 as *tumors uncertified* when, though not histologically confirmed, the diagnosis is unquestionable, 3 as *tumor suspects* when it is a likely diagnosis. In this last group we keep a careful list also of a variety of conditions loosely designated as *pseudo-tumor,* (though not in the meaning of Nonne), comprising states, whether so proven or not, other than tumor, but which have been sent to the clinic in view of a supposed tumor syndrome. The tentative diagnosis of some of these conditions, as other than tumor, may come to be verified subsequently at operation or autopsy, but mistakes in these borderline lesions are common and cases long classified as pseudo-tumor sometimes prove in the end actually to have had a tumor, just as an occasional patient with the diagnosis of 'tumor uncertified' proves in the end to be other than a tumor case.[10]

The following greatly compressed table will show something of the numbers and give a general idea of the situation of the tumors in my complete series up to the first of September.

	Fore Brain			Pituitary incl'g Suprasellar		Hind Brain			
	Certified	Uncertified	Suspects	Certified	Uncertified	Certified	Uncertified	Suspects	Totals
Baltimore Series	101	51	23	41	20	53	34	14	337
Boston Series	146	110	62	132	52	131	72	30	735
Totals	247	161	85	173	72	184	106	44	1072

It will be seen that out of 1,072 cases classified in the tumor group, in 604 or about 60 per cent the nature of the tumor has been histologically

9. We make one exception to this, namely, in the case of gliomatous cysts, the character of whose fluid contents in about 99 per cent of cases serves to verify the character of the lesion.

10. This question of tumor classification I brought before the American College of Surgeons in an address last fall, and it is a matter which Dr. Percival Bailey has elaborated in some detail in connection with the series of cases observed during his sojourn as my assistant.

verified. It would lead us too far in a general address to attempt a classification of these verified lesions or to tabulate them according to their anatomical regions, though in view of their group predominance the tumors of hypophyseal origin have been separately listed in the above table. We must concern ourselves on this occasion more with the surgical than with the pathological aspects of these conditions.

To give some general idea of the more strictly operative features of the work the following figures of a consecutive twelve months of service ending September 1, 1920, have been assembled for me. Out of 182 different patients admitted with a diagnosis of presumptive or possible tumor during this period the cross reference cards show that 54 were not operated upon.[11]

The remaining 128 cases were operated upon in the sessions with 16 fatalities, giving an operative mortality of 10 per cent, a case mortality of 12.5 per cent, and a mortality of 15.5 per cent for the 77 patients for whom a tumor extirpation, partial or complete, was attempted. Considering the gravity of many of these procedures the percentage may be considered reasonably low, but it is capable, I am sure, of being reduced by one half with earlier and more exact diagnoses.

TABLE OF OPERATIONS FOR TWELVE MONTHS ENDING SEPTEMBER, 1920.

Character.	No.	Fatalities.
Forebrain:		
Subtemporal decompressions (palliative)	20	1
Subtemporal decompressions (disclosing tumor)	2	0
Osteoplastic exploration (cerebral)	5	0
Osteoplastic exploration (with decompression)	24	0
Osteoplastic exploration (with total or partial tumor removal)	24	5
Pituitary:		
Transphenoidal (partial removal of tumor)	20	1
Osteoplastic frontal exploration	8	0
Osteoplastic frontal exploration (total or partial tumor removal)	7	0
Osteoplastic temporal exploration	1	1
Cerebellar:		
Suboccipital exploration and decompression	25	2
Suboccipital exploration (with total or partial tumor removal)	24	6
	160	16

11. These may be dismissed with the explanation, first, that three patients died shortly after entering the hospital, two of them with *tumor verified* at autopsy; second, that 23 are recorded as *cerebral* or *cerebellar tumor uncertified*, one of these the third of the fatal unoperated cases; third, the remaining 28 cases are cross-indexed as *tumor suspects* and represent a great variety of conditions with such presumptive diagnoses as encephalitis, arteriosclerosis, aneurysm, cerebral syphilis, and so forth. In this group of 28 there is only one case in which the lesion so far has been transferred from the tumor suspect to its proper group owing to verification of the lesion; a blind child with symptoms I had thought to be due to an infundibular tumor with hydrocephalus, but which proved to be due to a thrombosis of the superior longitudinal sinus.

The following additional notes of the fatalities should be given. One of them occurred in the series of 22 subtemporal decompressions for unlocalizable tumors. No examination was permitted and the lesion therefore remains permanently not certified.

Of the 24 attempts to remove cerebral tumors when exposed by an osteoplastic cranial resection there were five fatalities, four of them in the endothelioma group, as follows: of the Gasserian ganglion, one; of the falx, one; of the mesial hemisphere, two, the death in one occurring several months after a total extirpation, in the other, an old man of 86 with epilepsy—it occurred from exhaustion due partly to a prostatic obstruction necessitating a supra-pubic operation. The fifth fatality in this group followed the extirpation of a large glioma.

Of the 36 pituitary, or attempted pituitary, exposures operated on by various routes, two patients were lost, giving a mortality of 5.5 per cent. One of the 20 transphenoidal operations, an advanced case of acromegaly, died in 48 hours (autopsy refused). There were no fatalities in the 15 transfrontal cases, but then, in a considerably smaller percentage in this than in the transphenoidal group was the operation successful in its purpose. The single attempt to deal with an interpeduncular tumor from the side was fatal, presumably from postoperative cerebral edema, a consequence of the dislocation necessary to secure a sufficient exposure.

Of the 25 suboccipital explorations for presumed cerebellar lesions the two deaths occurred in cases of mistaken tumor localization, one of them a child with secondary hydrocephalus due to a bilateral papilloma of the choroid plexus, the other in a patient with a large diffuse cerebral glioma.

Six of the 24 cerebellar cases succumbed after a more or less complete tumor extirpation; one of them three weeks after operation, following a fall causing contusion and hemorrhage; another a patient with an acoustic tumor, who also had exophthalmic goiter and died of weakness on her 28th day; another an acoustic tumor expiration with death from inhalation pneumonia on the 15th day. The fourth case died on the second day, of respiratory paralysis after a partial removal of a glioma from over the fourth ventricle; the fifth died suddenly on the third day, after a thorough evacuation of multiple cysts due to a chronic arachnoiditis (pseudotumor, verified); the sixth case died six weeks after an

apparently successful extirpation, intact, of a tuberculoma.

The highest mortality, therefore, in this 12 months' series was in the suboccipital group of 49 operations with eight fatalities, giving a 15 per cent mortality, or a 25 per cent mortality for the cases in which tumor extirpation had been attempted. In this particular respect the record for the 12 months was a bad one, but the high percentage is due to the inclusion of the three cases which died some weeks after the operation from causes not directly attributable to it. Were one justified in eliminating these three cases the mortality would fall one half, which is about where it should be.

Needless to say, in this entire series there has not been a single case of wound infection. One of my assistants, who had served in the hospital for over two years, had only seen a fungus cerebri in pictures until he went to France with our Hospital Unit and met with this condition for the first time in the cases of craniocerebral injury due to gunshot wounds.

Pituitary disorders. In my address of 1905 there is a foot-note to the effect that conceivably a diseased pituitary body might some day be successfully attacked. How little was understood of pituitary disorders at the time can be appreciated from the fact that not until a year later (1906) was the first example of an infundibular tumor recorded in the Johns Hopkins series, and though a diagnosis of tumor with hydrocephalus was made we had not the faintest idea of the location of the lesion. When this was disclosed long after at autopsy we had, even then, no inkling of the disturbances of metabolism the tumor had provoked.[12]

Today the diagnosis of so-called adiposogenital dystrophy, particularly when due to a suprasellar tumor, would be made at sight by an undergraduate, for the clinical aspects of pituitary insufficiency when once pointed out prove to be as striking as those of cretinism or myxedema. Chagrined as we were by this experience, it nevertheless served a good purpose since it made possible an interpretation of the experiments undertaken the following year in the Hunterian Laboratory with S. J. Crowe and John Homans. For in the course of some experimental canine hypophysectomies, the counterpart of these clinical states showing that they are due to a deprivation of pituitary secretion was unexpectedly hit upon.[13]

From this small beginning it has come about that hypophyseal disorders are now recognized almost as often as those of thyroid, and there is no reason to believe that one of these two glands is affected by disease any oftener than the other, though in view of the exposed seat of the thyroid the diagnosis may be read from afar.

In March, 1909, I first ventured to operate for a pituitary tumor in a case of acromegaly, employing a modified transphenoidal approach to the sella, the result of abundant studies on the cadaver. The procedure was merely a further development of the operation by way of the nose first, first used in its crudest form by Schloffer, the chief modifications making it possible to avoid nasal deformity and to lessen the likelihood of a postoperative infection. The case was a fortunate one [14] and led me to develop the operation by this route still further, though fully aware of its limitations, for it is only appropriate to those cases in which there is a wide dilatation of the sella.

At the time of my second address in 1910 there had been 20 cases under observation and the following cautious expression of opinion was given:

No one as yet would venture to assert that a tumor in the infundibular region can be totally removed, and inasmuch as pituitary headaches and pressure against the chiasm may be relieved by a local decompression or by the chance evacuation of a cyst, it would seem wise for the present at least, in view of the importance of the gland, to confine operative measures in most cases to the mere removal of the sellar base with incision of the glandular capsule—a local decompression.

A further statement expressing conservatism was made to the effect that "hypophyseal tumors which have extended from the infundibular region into the cranial chamber proper must be treated by the same rules of decompression as would be applied to any equally inaccessible lesion elsewhere."

Time has shown that the former statement was unnecessarily cautious, for in most transphenoidal operations a considerable amount of tissue is removed. In the latter statement I was quite wrong, for a subtemporal decompression rarely benefits a patient suffering from pituitary headaches, for they are due to local rather than general pressure effects. Hence when an adenomatous gland has penetrated its dural envelope and invaded the cranial chamber, it must be surgically approached

12. The case with one other was reported under the title "Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri." J. Nerv. & Ment. Dis., Nov., 1906, xxxiii, 704-716.

13. Clinical Aspects of Hyperpituitarism. J. Am. M. Assn., July 24, 1920, liii, 249-255.

14. Partial Hypophysectomy for Acromegaly. Ann. Surg. Dec., 1909, 1, 1002-1017.

from above, if at all, by an osteoplastic exposure of the region.

In a monograph on pituitary diseases, published in 1912, after a general discussion of the subject, my 43 surgically treated cases were recorded. I had had but a single experience at the time with osteoplastic temporal procedures such as Horsley had practiced, and none with the approach from in front by elevating the frontal lobes as originally proposed by Hartley and McArthur.

With our increasing familiarity with pituitary tumors, however, the cases with an indubitable infundibular lesion surmounting a more or less normal sella, which would preclude an operation from below, came to be so often recognized as to necessitate the employment of some osteoplastic measure, and the frontal procedure was given precedence. Since my first case (Dec. 12, 1913), a considerable number of these operations, occasionally with a gratifying result, have been undertaken. Recently Heuer and Dandy in Baltimore and Adson in Rochester have warmly advocated a development of the lateral approach, first employed by Horsley. Unquestionably there is no one operation suitable for all cases, but I feel that the postoperative complications and high mortality, approximating 40 per cent, which so skilful an operator as Dr. Heuer admits,[15] in view of the scant promise of permanent cure on recovery, will deter others from adopting this procedure.

In general terms, it is my present opinion that when there is a primary pituitary adenoma with enlargement of the sella and signs of implication of the chiasm, the operation of choice is a transphenoidal one. Properly conducted, it is an operation of comparatively low mortality,[16] convalescence is a matter of a few days and the results are often brilliant, with restoration of vision—the main object of the operation—which may be astonishingly rapid. However, as Dr. Heuer points out, it is not an operation which is likely to be repeated with equal success (true enough of any operation) in case the adenoma continues to grow rapidly or has already broken down the dural barriers and invaded the cranial cavity. Under these circumstances, if an operation is to be done at all, it must be from above if there is to be any prospect of preserving or restoring vision, and this—an improvement in vision—not mere operative recovery, is our present criterion of a successful procedure.

It is very doubtful, however, at an early stage of a primary intrasellar adenoma when the conditions are favorable for an operation through the nose whether patients should be urged to, or would be willing to submit to an operation from above, with its admitted high mortality and likelihood of complications. For it is accompanied by a wide exposure of the brain whose cortex may suffer injury as may indeed the chiasm itself, and the operation furthermore opens the dural barriers so that further enlargement of the growth finds ready access to the region we would wish to protect.

With primary infundibular tumors surmounting, as they often do, a small sella of normal proportions, the problem is entirely different, and I am led to favor with some modifications the unilateral osteoplastic frontal operation. In the 34 patients with operations of this type (43 in number) there have been only two fatalities, the second and third cases. However, in only 17 of the 34 patients was the lesion disclosed and in not all of them could it be satisfactorily dealt with. In 50 per cent of the cases therefore the nature of the lesion remains uncertified.

In a few cases, nevertheless, the results have exceeded all expectations and it has been possible to enucleate small solid tumors or to empty a cyst and subsequently to detach and draw out its collapsed sac. But I must confess that it is not an operation to be made light of, and I have occasionally added to the pre-existing damage of the optic nerves. Indeed it has been necessary once or twice to divide the functionless one of the pair in order to dislodge the growth. In the case of the pharyngeal-duct cysts, a condition which would seem most favorable, the results have been disappointing, for the cysts promptly refill unless the wall is fully removed.

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15. Heuer, Geo. J. Surgical Experiences with an Intracranial Approach to Chiasmal Lesions. Arch. Surg. i, 368-381.

16. At the time of writing my monograph on the Pituitary Body in 1912 there had been 29 transphenoidal operations with four deaths (13.7 per cent mortality). By the time of the Weit Mitchell Lecture (J. Am. M. Assn., Oct. 31, 1914, lxiii, 1515-1525) on Surgical Experiences with Pituitary Disorders there had been to May 12, 1914, 74 of these operations with seven fatalities (9.5 per cent mortality). A review of the cases since then shows an additional 83 operations with eight fatalities (9.8 per cent), making 157 transphenoidal operations in all with a mortality of 12.1 per cent for the entire series.

The fight for vision is the crux of these operations, and after all, the question of proper methods we neuro-surgeons must settle among ourselves, not by writing papers but by seeing one another's cases and attending one another's clinics. Meanwhile neurologists and physicians who have the decision to make may be comforted by the fact that the majority of these operations can be performed with a comparatively low mortality and a degree of symptomatic improvement which is constantly increasing.

Patients with disorders of the ductless glands, of the hypophysis in particular, show more or less characteristic mental attributes not necessarily deviating widely from the normal. I was inveigled once into writing an article on the subject, and whether from this or from some other beginning certain practitioners calling themselves endocrinologists have erected an extraordinary structure of symptomatic complexes based on meagre evidence and a fervid imagination. This has reached its climax in a recent monograph by a psychiatrist, Laignel-Lavastine. There is no way, apparently, of checking these elaborations, which bear about as much relation to the functions of the ductless glands as did the phrenological imaginings of Gall and Spurzheim to cerebral localization. Epidemics of this sort from time to time hysterically sweep over medicine, dying out in due course, the more quickly if unmolested.

Studies on the Cerebrospinal Fluid Circulation.

It is true of all intracranial operations that in the knowledge of ways and means of controlling tension lies the chief secret of surgical success. Intracranial over-tension is largely a matter of an increase in the fluid content of the chamber, whether it exists as free fluid in the ventricular and arachnoid spaces or as an edema, a state to which the nervous tissues are particularly prone. Though formerly the extensive withdrawal of fluid was looked upon with apprehension it has come to be an essential step in many craniocerebral operations, during the course of which the fluid, either from ventricles or arachnoid spaces, is not only thoroughly evacuated but may be permitted to drain away during the course of a long operation. There may be ways other than by external drainage of accomplishing the same thing, but to this we will return.

One of the problems which confronts the neurosurgeon is some method of dealing with the disturbances of cerebrospinal fluid outflow which lead to such malformations and disorders as spina bifida and "essential" hydrocephalus. In the latter condition, operations innumerable have been advocated since the earliest time, none of them proving to be based on correct principles if one may judge from their lack of success in practice. I have always cherished the view that these hydrocephalic conditions were produced by some failure of development of the points of escape for the fluid from the cranial chamber rather than, as was long supposed, from a fault or obstruction at the foramen of Magendie. The fact that in most cases the fluid could be withdrawn from the ventricles by a lumbar puncture, in other words that it had access to the subarachnoid spaces, certainly seemed to favor this view.

Some early studies on hydrocephalus were carried out in the Hunterian Laboratory with Walter E. Dandy in 1910-11. It was found possible not only to catheterize the aqueduct of Sylvius but to produce an experimental hydrocephalus by mechanically obstructing it. At the same time some early attempts were made to investigate the functional activity of the plexuses but we did not get very far with them.[17]

It became apparent that it would be necessary to carry our studies to the meninges if we were to find the most likely sources of obstruction. This work was undertaken by Lewis H. Weed in conjunction with Paul Wegefarth in the Surgical Laboratory during my first two years at Harvard. In the introductory notes to the series of reports upon this work[18] a statement of the problems we had set ourselves to solve, so far as time would permit, is as follows:

". . . Granting that the choroid plexuses are the chief source of the cerebrospinal fluid—and this has not been conclusively proved—is the process, as some believe, a transudation, or an actual secretion, or as Mestrezat regards it, a mere dialyzation from the blood? What conditions activate and what conditions inhibit these choroidal glands? Have they an internal as well as an external secretion? To what primary diseases are

17. Dr. Dandy has recently reported the results of these and some more elaborate subsequent studies which he undertook independently. By an ingenious method he has been able to show quite conclusively that the fluid is elaborated by the plexuses without the ependyma taking any part in it. Experimental Hydrocephalus. Trans. Am. Surg. Assn., 1919, xxxvii, 397-428.

18. Studies on the Cerebrospinal Fluid and Its Pathway. Journ. Med. Research, 1914, xxxi, 1-176.

they subject? How early in embryonal life do they secrete? Why does the fluid which they elaborate differ so greatly from that secreted by most other glands? Why are the cells so impermeable to the passage from the blood stream of drugs and of substances such as the bile pigments which in conditions of jaundice quickly stain all other body tissues and fluids?

Granting that the fluid thus secreted by the choroid plexuses leaves the ventricles and spreads over the brain and down the cord in the subarachnoid spaces, does it receive accessions from elsewhere, from the ependyma or from pituitary or pineal glands? Are there lymph channels in the brain, and if not how does the central nervous system dispose of its products of tissue waste? If there are cerebral lymphatics do they discharge into the subarachnoid spaces and is the subarachnoid fluid therefore of the same character chemically, physically, and cytologically as the ventricular fluid? Why normally is the fluid practically limited to the subarachnoid spaces, and under what conditions does it become subdural?

Granting that fluid may escape by way of the Pacchionian granulations, is this the chief or only manner of escape? If an important avenue, why are these structures lacking in the lower animals and in the human infant? Are these granulations therefore pathological processes, and if so, what are their precursors? Are there other means of fluid absorption along the nerves by way of the lymphatics, and if so, how important are they? How do the spaces in the pia-arachnoid develop and do the choroidal glands mature and secrete before or after their formation? Are there faults of development at these meningeal outlets for fluid which can account for congenital cephalocele? Are there analogies in the fluid circulation of the eye to which we may attribute the disturbances of circulation of the intraocular fluids?"

Weed, by adapting the principle of injection of non-granular fluids from which granules might subsequently be precipitated, showed conclusively that the arachnoid villi represent the points of escape for fluid which, by a process of seepage enters directly into the pachymeningeal sinuses. It was, I believe, Wegefarth's proposal that in cases of hydrocephalus a series of direct punctures be made directly through the sinuses into the subarachnoid spaces, under the assumption that the puncture holes would become occluded by arachnoid, making thereby new and artificial villi through which fluid might escape.

Weed's continuation of these studies on his return to Baltimore and his demonstration of the manner of development of the fetal arachnoid spaces which I assume (though the point remains to be proved) to take place when the choroid plexuses first begin to actively secrete, certainly stands as the most important contribution to our knowledge of the meninges since Key and Retzius.[19]

If it is true that most cases of congenital hydrocephalus can be accounted for by a faulty development of the villi the rational treatment is to reproduce in some way this channel of outflow either by direct drainage into one of the larger sinuses or by encouraging the formation of new villi in the manner Wegefarth suggested, rather than by an attempt to check the formation of fluid.[20] At least it is along these lines that our surgical efforts have tended of late years. Certainly no form of drainage into tissue spaces is effective, for by a curious property of the extracranial tissues when they are made edematous by cerebrospinal fluid leaking into them, a smooth endothelial-lined sac ultimately forms which is impervious to the further escape of fluid.

Such a procedure as Dandy has shown to be surgically possible, namely, the excision of the plexus from within the dilated ventricle, can hardly be expected to serve the desired purpose, for if there are any remaining fragments of plexus (and it is a complicated organ) the same degree of tension should recur so long as the ultimate outlets for the fluid are defective.[21] Possibly no more conclusive argument than that in Weed's more recent paper [22] could be given, favorable to the view that imperfect formation or occlusion of the villi is one source if not the most common one of what has been called idiopathic (for lack of understanding

19. The Development of the Cerebrospinal Spaces in Pig and Man. Contributions to Embryology No. 14. Carnegie Institution Publications No. 225, 1917, pp. 116.

20. In his more recent paper (The Diagnosis and Treatment of Hydrocephalus Resulting from Strictures of the Aqueduct of Sylvius. Surg. Gynec. & Obst., 1920, xxxi, 340-358) Dandy estimates that 66 per cent of all cases of congenital hydrocephalus are due to Sylvian obstruction. If this is true the agency of obstruction to which we have devoted attention is less common than we had supposed.

21. Grave doubts have been expressed by workers in Carlson's laboratory, as to the justifiability of the common assumption that the plexus is an active secretory organ and therefore that there is such a thing as a cerebrospinal fluid circulation. (cf. Frank C. Becht and P. M. Matill, The Amer. Jour. Physiol.. 1920, li, 1-173). If they are correct and we wrong, our entire theorem falls to the ground.

22. The Experimental Production of an Internal Hydrocephalus. Contributions to Embryology No. 44. Publication No. 272, Carnegie Institution, 1919, 425-446.

of the process) hydrocephalus. By injecting a suspension of lamp-black into the cerebrospinal spaces of kittens, he was able to produce extreme degrees of internal hydrocephalus quite comparable to similar conditions seen in human infants.

At the present moment there are two or three new proposals before us which have a bearing on the cerebrospinal fluid and its spaces, and though admittedly still in an experimental stage, one or all of them may come in time to have considerable importance from a diagnostic as well as therapeutic standpoint.

In a recent paper which has aroused great interest,[23] Dandy has put forth some very definite claims regarding the localizing value in cases of brain tumor, of what he calls *ventriculography.* This is nothing more than the taking of x-ray plates of the cerebral ventricles after their fluid contents have been removed and replaced by air. It is quite certain that in some rare conditions a more exact localizing diagnosis might be made in this way than in any other, and, in the case of tumors situated in silent areas above the tentorium which have led to dilatation as well as deformation of one of the ventricles perhaps only in this way. That the procedure may be sufficiently developed and safeguarded so that it can be routinely utilized for this purpose is quite within the realms of possibility.

One particularly striking case has been included in Dandy's report, whereby an unsuspected tumor in the right occipital lobe was disclosed, though one must confess that it might have been capable of localization by earlier and more exact perimetry. However, as I have stated, the procedure is in an experimental stage and surgeons may safely leave it in Dr. Dandy's hands to more thoroughly work out its possibilities as well as its hazards, as he doubtless intends to do: and it would be highly desirable under these circumstances for everyone who undertakes the procedure to notify its inventor of their experiences, and particularly of their accidents. In this way only will he be able to establish the proposal on a safe basis acceptable to others, as all hope that he may be able to do. That there have already been a goodly number of fatalities, doubtless in the hands of people less expert than the author of the method, is well known. It will soon have a bad repute if so much is expected of it as is given in the author's conclusions, and if the surgeon is encouraged to believe that henceforth he will have less need of exercising his neurological knowledge in localizing brain tumors.

Another procedure likewise in an experimental stage, though capable, it is hoped, of further development, is the diagnostic *puncture of the cisterna magna,* a procedure worked out in the Army Neurological Laboratory under Dr. Wood's direction during the war, and which has subsequently been warmly advocated by James B. Ayer.[24] When one realizes how loath the profession was to adopt Quincke's lumbar puncture as a more or less routine measure, one hesitates to say that a suboccipital puncture will not some day come to be as commonly employed. However, even a lumbar puncture is not without risk, as those are well aware who have seen patients with unrecognized cerebellar tumors die from respiratory paralysis soon after one has been made; and the risks of a puncture of the posterior cistern under similar circumstances would be infinitely greater, thence this procedure like the foregoing had best be left in the hands of its sponsors until they can give us complete details not only of the method but of its diagnostic and therapeutic possibilities, and above all of its hazards.

But probably the most suggestive papers issued by this laboratory during its short life were those by Weed and McKibben[25] on the experimental *alteration of brain volume* following the intravenous injection of various substances in solution. They observed that, after the cortex was exposed by a trephine opening, the intravenous injection of a watery solution caused the brain to protrude through the opening, and contrariwise that a hypertonic salt solution caused it to recede, sometimes to a very extraordinary degree.

That these observations had great possibilities of clinical application was immediately apparent to all, and Dr. Foley and others in my clinic have

23. Dandy, W. E.: Localization or Elimination of Cerebral Tumors by Ventriculography. Surg., Gynec. & Obst., 1920, xxx, 329-342.

24. Wegefarth, P., Ayer, J. B. and Essick, C. R.: The Method of Obtaining Cerebrospinal Fluid by Puncture of the Cistema Magna (cistern puncture). Am. J. Med. Sc., 1919, clvii, 789-797.

25. Pressure Changes in the Cerebrospinal Fluid Following Intravenous Injection of Solutions of Various Concentrations. Am. J. Physiol., xlviii, 512-530.

Experimental Alteration of Brain Bulk. Ibid., 531-558.

made it a matter of special study.[26] They found in the first place it would answer almost as well to give sodium chloride by mouth and it is at times quite amazing to see what an immediate symptomatic effect, particularly when there is increased intracranial tension, this simple procedure may have. That it is not entirely free from risk we have reason to know, but that it has great future possibilities of application we nevertheless are encouraged to believe, though here again it is a matter of slow, painstaking observation on the part of a single group of people rather than indiscriminate observations on the part of many, which in time will establish its therapeutic and diagnostic possibilities and risks. As has been realized for a long time, the application of physico-chemical knowledge to the problems relating to the nervous system promises large returns and Weed and McKibben's studies lie in this direction.

It would be premature to pass upon the future role, which any one of these three measures I have mentioned, may come to play. Let us hope that they will not suffer a wave of wild popularity, to be cast off like von Bramann's callosal puncture, as good for nothing, simply because it could not do in other's hands everything and more than its author claimed for it.

THE SPINAL CORD.

I have read over the general statement in my papers of ten and fifteen years ago regarding the surgery of the spinal cord, and though I might give many additional illustrations I do not know that there is very much to add to the general principles of these operations than described. There are more things, possibly, to retract than to add.

Infections. In 1910, Flexner's serum for cerebrospinal fever had just been introduced and held the stage, but I fear that we are no further advanced in our treatment of other forms of meningeal infection than we were at that time, though proposals for irrigation and drainage of the meningeal spaces recur at more or less frequent intervals.

Great hopes were aroused, particularly from a prophylactic standpoint, by Crowe's discovery of the passage of hexamethylenamine through the choroid plexuses and its prompt appearance, after administration by mouth, in the cerebro-spinal fluid. We did not know at the time, that it appeared unchanged, and that only in an acid medium like the urine was it broken up with the liberation of formalin. Crowe's observations, however, upon the efficacy of the drug, particularly as a prophylactic, in experimental canine meningitis were nevertheless so convincing, we have continued with its use in certain conditions—in patients with basal fracture, before transphenoidal pituitary operations, and so on. It certainly does no harm, though we may have been leaning on a broken reed.

In view of the fact that most of these pathogenic cocci are acid producers I have harbored the idea that in process of their multiplication enough acid may be given off by them to liberate a certain amount of formalin in their immediate vicinity, without producing an appreciable change in the reaction of the fluid as a whole—in short that in this way, even though the cerebrospinal fluid retains its faintly alkaline reaction, the growth of organisms may nevertheless be locally inhibited. We have attempted by physico-chemical tests to demonstrate the truth or otherwise of this conjecture, without any really definite conclusions.

Tumors. As stated before, there is no more satisfactory operation in surgery than the removal of an accurately localized endothelioma of the spinal meninges—no operation unless it be for some of the major trigeminal neuralgias, in which the transformation from a suffering and bed-fast invalid to a normal life is more like a resurrection. One may imagine the elation which Horsley and Gowers must have felt in 1888 on the occasion of their epochal first case.

My experience with these enucleable tumors has not been great—only seven cases additional to the one mentioned in my 1905 address which had been reported elsewhere.[27] Of many things I have learned in fifteen years, one is to beware of reporting "cures." This man had a recurrence of his symptoms, and some years later, at a secondary operation, a growth was disclosed which to all appearances might have been the primary one. On this second occasion it was removed together with the subjacent patch of meninges, and there has since been no recurrence. The lesson was thereby

26. Foley, F. E. B. and Putnam, J. T.: The Effect of Salt Ingestion on Cerebrospinal Fluid Pressure and Brain Volume. Am. J. Physiol., 1920, liii, 464-476.

27. Intradural Tumor of the Cervical Meninges with Early Restoration of Function in the Cord After Removal of the Tumor. Ann. Surg., June, 1904. xxxix, 935-956.

learned that it does not do to merely tilt these lesions out: their meningeal attachment from which they take origin must also be removed, and this is not altogether easy since the central point of attachment seems invariably to be at the point of emergence of a segmental nerve root.

It is astonishing how promptly it begins and how great a degree of functional recovery is possible in the flattened cords long subjected to pressure by such a tumor. What is more, the promptness with which this restoration sets in may be taken as an evidence of the delicacy with which the tumor enucleation in the series gave the history of having had a cancer of the thyroid removed in 1900 and in 1903 a cancer of the breast, consequently when her spinal symptoms began to appear a few years later they were naturally attributed to a metastasis. For this reason an exploratory operation was thought inadvisable, and she gradually became bedridden from paralysis. However, the results of a neurological examination, coupled with the characteristic manner of onset of the symptoms, were so unmistakably in favor of a spinal endothelioma that an exploration was advised and the expected lesion found and removed. Voluntary movements in her previously paralyzed extremities were possible the afternoon of operation, and before her discharge she was walking with slight assistance and now, a few months later, goes about alone.

From these brilliant results, which are all too few, there is a long graduation of less and less favorable cases to the malignant growths at the other end of the scale. No sufferers so greatly tax one's sympathies as the victims of a malignant spinal metastases, and in 1910 I find that I had even suggested the deliberate transsection either of the entire cord or of the posterior columns alone, cephalad to the lesion. The alternative of pain or complete permanent paralysis is hard to face, for patient as well as surgeon, and was one which I had shrunk from until a few years ago, though fully aware that the victims of a transsection, the result of a crush, usually lead an existence free from pain and surprisingly often take a curiously detached and philosophic view of their plight. This peculiar dispositional attitude of mind has seemed, in short, to be a mental attribute consequent upon the abolition of all impulses from the lower body.

Much against my wishes, there was admitted to the wards in 1916 a woman suffering great pain from an obvious spinal metastasis, attributable to a breast amputation for carcinoma performed twenty-five years before. As her paralysis below the twelfth thoracic level was nearly complete, it did not seem possible that she could live for long. For months her pain had been controlled by morphia, which seemed the only recourse. She however, held out for months, courageous and cheerful, though begging for some operative relief, until finally with many misgivings I divided the cord in the more accessible thoracic region well above her lesion. The results far exceeded both the patient's and my own expectations. She had no more pain whatsoever, her narcotics were completely withdrawn, she gained in strength and color, acquired an automatic bladder control and lived in really great comfort, bodily and mental, despite what she knew to be in store for her. The end came six months later—the easiest and happiest end in a case of this kind of which I have cognizance.[28]

Akin to this, though less radical, and advocated for less critical conditions, are other palliative measures which have been put in practice. Förster's posterior root division in cases of tabes, which is but a development of the old operation advocated for intractable neuralgias of amputation stumps, is one example. Another is procedure which Frazier and Spiller have described, of dividing the antero-lateral columns alone, a procedure similar to that which I suggested in 1910, though based on Henry Head's subsequent more accurate localization of the pathway for pain.

Trauma. What was said on this score from a surgical point of view in my first paper I do not think I can now improve upon—the division into, 1, the hematomyelias; 2, the total cross-lesions usually from fracture dislocation, and, 3, the partial injuries, these being the only ones suitable for surgical intervention. The difficulty lies in dis-

28. Her death occurred while I was overseas, where the following letter was received from her husband. It may deserve quoting in view of the rarity of such a procedure. ". . . . After the operation she was brought home in May, and was enabled to enjoy the birds and flowers, and go out in a wheel chair. She finally very slowly yielded to the disease, passing from us Oct. 31, nearly a year from the time she entered the hospital. She was cheerful and patient during all her illness, but beyond digestive troubles she had little pain and nothing acute. . . ."

tinguishing the three groups, and one must acknowledge that there is no sharp dividing line between them. In this respect, however, we will have learned much, chiefly through a study of the victims of spinal gunshot wounds in the late war, though it will probably be a long time before all the material is thoroughly studied. Placed as some individuals were, Colonels Sargent and Holmes, for example, at one of the important British bases, it was possible to secure specimens for later study of lesions of practically every segment of the cord in a series of cases which had been previously subjected to a thorough neurological study. Madame Déjérine's opportunities with the spinal injuries occurring in the French army were almost as favorable and she has already published some extraordinary observations concerning ossification of the muscles in areas below the segmental level of the lesion.

Many remarkable and unknown facts were brought to light regarding the localization of function in the cord, but possibly the most immediately arresting were the studies by Henry Head and his co-workers.[29] Their observations have shown that, even when in its cross extent, the lesion has been anatomically complete, the cord distal to the lesion is capable of resuming its reflex function to a degree hitherto unappreciated. This process, in the absence of infection, begins to set in after the third week, at which time the lower spinal reflexes begin to reappear. Hence the old conception of a permanent loss of deep reflexes with flaccid paralysis as in indication of a total transsection falls to the ground.

Though these observations are of great importance in advancing one's physiological knowledge, they do not necessarily affect in any apparent way our surgical procedures, except to influence surgeons to favor in every way possible the return of the so-called automatic bladder reflex which enables the unfortunate victim of these injuries to hold their urine for a few hours at a time.

This involves a problem relating to the care of these patients for which the war does not seem to have given a satisfactory answer, namely, the correct method of dealing with the bladder in the early stage of retention. The main desideratum, if one hopes to attain for his patient a subsequent automatic bladder control, is the avoidance of infection, and whether a constant drainage by catheter from the outset, repeated catheterization, suprapubic drainage, or the avoidance of any direct interference whatsoever and letting the bladder distend till it dribbles—which of these methods is best no one, so far as I am aware, was ever able to satisfactorily determine, nor in this generation, will we again, let us hope, have so good an opportunity of finding out.

One thing these observations of Head have served to explain are the mystifying reports which have appeared in the literature from time to time regarding the restoration of function in a completely severed spinal cord after a laminectomy and suture. Unquestionably they were erroneous observations to be explained by the reappearance of these lower spinal reflex movements which were erroneously interpreted as an evidence of transmission of impulses from above.

THE PERIPHERAL NERVES.

The surgery of the peripheral nerves, other than cranial, belongs largely though not entirely, in the domain of traumatic surgery, and as injuries of the larger nerves are often coupled with deformities and need what is called physiotherapy, together with some supporting apparatus in their after care, a bid for these lesions during the war was made by the orthopedists.

It was calculated that fully 25 per cent of all major injuries of the extremities were accompanied by a more or less serious involvement of important nerve trunks, and it makes little difference who cares for them—if the orthopedist he must have a better neurological training and operative technique than most possess; if a neurosurgeon, he must familiarize himself more than he is accustomed to with the mechanical correction of paralysis. The subject at all events received a great fillip during the war and much has been learned and much unlearned regarding nerve sutures. Attention may be called to a few points which stand out clearly from the great number of published observations.

It has long been known that divided nerves, given half a chance, tend to reunite. Indeed, under circumstances when a purposeful section or avulsion of a nerve has been made it is well nigh impossible at times to prevent some degree of functional reunion. This the old-time peripheral operations for facial neuralgia made only too clear. What takes place has been more or less a subject

29. Fearnsides, Head & Riddock: Brain, 1918, xl, Parts II and III, 149-402.

of academic dispute between the supporters of the neurone doctrine and those of Bethe's school who believed in the possibility of a peripheral regeneration of axones. Though Bethe undoubtedly found axones in the peripheral segments, Langley's explanation of their presence was doubtless the correct one. In short, the proliferation of the cells of the neurilemma sheath is the only peripheral process, and though this prepares the way for the axone, unquestionably the axis cylinder must grow down from the proximal segment.

From the great mass of material of the past few years the curious observation was soon made that certain nerves show a much greater tendency to perfect functional reunion than others. To take a single example, the prognosis was far better than after a corresponding injury of the median. This appeared, moreover, to have no relation to the distance between the seat of injury and the periphery, for a high radial suture was more favorable than a low median. The explanation for this which seems best to meet the facts is that the functional recoverability bears relation to the degree of purity, whether sensory or motor, of the nerve in question. Thus the musculospiral nerve has a great preponderance of motor fibres and consequently after suture there is less chance of motor axones finding their way down sensory pathways and the reverse, than if the number of sensory and motor fibres were more nearly equal as is true of the median.

This at least is the interpretation which appears best to fit the facts before us, though it is one which is difficult for me to believe, as it seems a poor provision of Nature. Though we have little knowledge of what the nerve impulse really is, much less of the distinction between a motor and sensory impulse, there certainly must be some chemical difference between the two nerves which would lead us to assume a predilection of downgrowing sensory axones for sensory paths and motor for motor.

Be this as it may, it is assumed, when an imperfect functional result follows what seems to be a simple and perfect nerve-suture, as so often happens after median nerve sutures, the majority of motor fibres have grown down into sensory sheaths to sensory end organs whose messages they are incapable of transmitting, and the majority of sensory fibres likewise to motor end organs.

This interpretation may be quite wrong, though, as I say, it seems to fit the facts and, if correct, it would appear to favor such detailed operative procedures as Elsberg has described, based on Déjérine's studies of the cross sectional topography of bundles in the peripheral nerves. However, even if it is surgically possible to approximate a divided peripheral nerve, bundle for bundle, in the process of a nerve suture, of which I have doubts, there is something other than end-to-end proximity—and it is only a matter of millimeters—which attracts the wandering axone into some particular peripheral tube. Indeed, one may see a perfect functional result when an actual gap has been left, or contrariwise, an imperfect result with the most painstaking approximation.

One thing has been made clear beyond question, and that is the supreme desirability of bringing the two ends of the severed nerve together without the interposition of a bridge, and ingenious ways and means of accomplishing this not only by stretching and by mobilization of the nerves but by shortening the gap in case of great loss of substance by retaining the limb in a position of acute flexion until union has taken place.

Losses of substance of several inches can be overcome in this way, and it has meant the abandonment of the pre-war ideas regarding tubularization and implantations as a means of overcoming gaps —procedures which by increase in scar formation doubtless served to defeat the very object they were intended to serve. To be sure, there have been some remarkable recoveries, particularly in musculospiral nerves after the implantation of nerve autografts, and Nogeotte, whose experimental studies have been more extensive than any, favors the implantation, if one must be made at all, of a section of nerve from another source, which has been fixed in alcohol, but of this I have no experience.

Unquestionably, interest in all these matters, aroused by the war, has turned the attention of many of our younger surgeons with renewed interest to some of the neurological problems of surgery. Brief courses were given in New York, Philadelphia and St. Louis, largely under the direction of Drs. Elsberg, Frazier and Sachs—which served further to concentrate attention on the subject and to give certain medical officers whose inclination lay in this direction some general ideas of traumatic neuro-surgery.

Excellent as all this was, it is a far cry from traumatic to pathological surgery, from doing a peripheral nerve suture to a trigeminal neurec-

tomy, from the repair of a craniocerebral injury to the removal of a brain tumor. Then, too, the lack of personal responsibility about one's army patients—a responsibility entirely assumed by the Government—coupled with the difficulty or impossibility of learning of one's end results did not inculcate in many medical officers the fastidiousness of clinical study or operative technique which is a *sine qua non* of success in civil surgery and above all of civil neuro-surgery.

I have not touched upon the *surgery of the cranial nerves* as this address is already too long. There are many interesting and important aspects of this topic, though possibly the surgery of the *trigeminus*, and of trigeminal neuralgias in particular, overshadows all else in this particular domain.

I have made these major neuralgias the subject of a recent study, and the results, given a year ago in the Hatfield Lecture before the College of Physicians of Philadelphia, are in process of publication. It may suffice to say that the modern operation of sensory root avulsion, whoever may deserve the main credit of evolving the procedure, is an operation practically free from risks and with a mortality lower than that of almost any other so-called "major" operation in surgery.

In my own series, now comprising 343 cases, there have been only two fatalities, the ninth and thirtieth cases, both of them dating back to days when efforts were made to remove the ganglion together with the root in their totality. There have been 313 consecutive cases without a fatality. There is no operation in surgery that I know of which can so completely relieve such an incapacitating malady and with such slight risk. There are possibly 5 per cent of the cases which are not cured, cases in which the diagnosis was incorrect and in which the facial pain, supposedly trigeminal, is really of some other origin.

A National Institute of Neurology. Though as a matter of fact it was the first time that such a special line of work as is represented by neuro-surgery was recognized by an Army Medical Corps, the department was not utilized to its full for many reasons, not the least of which perhaps was the old chauvanistic idea that he who is called a general surgeon must do equally well all things surgical. Nevertheless, the desirability and need of specialization in military medicine more than in any previous war came to be accepted as a principle, and in some divisions of the service, where it obviously could prevent wastage of man power, it played an important role.

Those of us, however, who had the overseas responsiblity for the care of such injuries of the nervous system as would incapacitate soldiers for further service, aware of the fact that these men would be the last of all our wounded to recover, and even then very imperfectly, were disturbed by the lack of co-ordination of neurological interests which possibly the scramble during our short period in the conflict made inevitable. Since most of the surgeons delegated to the neuro-surgical subdivision had only a meagre neurological training and the neurologists were all occupied in the important field of psychiatry, none of us got as far with our neurological problems as if we had been organized together.

Cognizant of all this, Drs. Salmon, Schwab, McCarthy and myself, after many conferences, were unanimous in the feeling that some more effective organization should be brought about and that centers should be established where psychiatrist, neurologist, neuro-surgeon and neuro-pathologist could be brought together, and where functional as well as organic cases could be seen and studied and treated conjointly for the benefit not only of the soldier but of neurology itself.

This is all past history which I have gone into more fully on another occasion,[30] but I touch upon it again for the reason that out of these conferences there developed the idea of a national institute of neurology. The four men whose names I have mentioned agreed to withdraw from their pre-war engagements to take full-time positions in such an institute, provided the necessary funds could be secured for its establishment on a generous national scale. No one could possibly have been better fitted to launch and direct such an institute than Colonel Salmon, whose interests largely lie in the sociological aspects of neurology. It was hoped that under him, as subordinates, a neurologist, a psychiatrist and a neuro-surgeon might each have a hospital ward for their special cases, and that the neuro-surgical laboratory which under the direction of Major Weed of Baltimore had done such admirable work during the war might be taken over intact. It was assumed that during its first few years this institute would be entirely at the disposition of the Government and the Army for the care of the neurological cases which, as I have said, remain the last precipitate of the war injuries—cases which now, alas, are wide-scattered.

The venture proving a success, as it almost cer-

30. Concerning the Establishment of a National Institute of Neurology. Am. J. Insanity, Oct., 1919, lxxvi, 113-129.

tainly would have done, it was anticipated that with the war work finished it would become a national center, an institute and hospital, for the study of disorders of the nervous system—a central rallying place where psychologist, psychiatrist, neurologist, neuro-surgeon and experimental pathologist could work in co-operation—a training ground as well for their successors who for the first time in any country would be given an opportunity, after graduation, for a broad general neurological training.

This, gentlemen, is by no means an idle dream. The situation two years ago was most favorable for the inauguration of such a movement, a movement whose ultimate objects were to bring intimately together all of those who from one aspect or another are attacking problems relating to the diseases of the mind and the nervous system. There is nothing which is possibly of more vital concern to the nation than a knowledge of the mental disorders to which its citizens are subject. There are few things relating to the health and well-being of the community more neglected. For a single imperfectly endowed clinic for the study of mental disorders probably twenty institutes for the study of cancer, of infectious diseases and so on have been established, whereas the insane forgotten in our asylums and those with nervous and mental disorders who helplessly frequent our clinics and out-patient departments outnumber all other patients by far.

This project may seem far removed from neurological surgery, but I have an instinctive feeling that some day such an institute on a scale as large as the recently founded Institute of Hygiene will come to be established. When that day arrives, the neuro-surgeon will of necessity be a participant, and from the contacts therein possible will come to have the proper neurological training essential to the success of his particular field. He will need a preliminary general surgical training, but he will nevertheless have to be a product of a school of neurology in a broad sense such as we do not now possess, nor any other country, for the matter of that.

In the preamble to this address regarding specialization in general, my hearers may have been aware, between the lines, that I was reading my own confession into what was written. It is true, for despite a reasonably broad surgical preparation, I confess to have climbed into neurology by the outlying route described. It is for this reason that I thoroughly understand how essential it is for the neuro-surgeon of the future, if he is really to do justice to this new specialty, to have a far better grounding in clinical neurology and psychiatry than I have had, for he must make his own diagnoses and must have an intimate knowledge of neuro-pathology if he is to know what conditions are amenable to surgical therapeutics.

Many people are eager to enter this field of work. Hardly a month passes without some well established surgeon writing to ask if his assistant may be given some instruction in "brain surgery" and can we take him. We are glad to do all that is possible. "Yes, he attended lectures in neurology as an undergraduate, and then there are colleagues who will make his neurological studies and use the opthalmoscope for him." He comes and spends a short time as an onlooker and returns to his clinic a neuro-surgeon.

It will be a bad thing for neurological surgery when it becomes fashionable. Gynecology has already suffered from this, and orthopedics is in the way to follow. Tendencies in this direction, to my despair, are apparent. Glad as I am to feel that the importance of the subject as a special line of work is becoming recognized, and confident as I feel that the day will come when professors of neurology in our schools will have had a surgical training just as the present-day gynecologist and orthopedist must have, nevertheless the way to bring about this desired end is not through the surgical operating room alone, but by the slow process of the neurological clinic and the laboratory. Let us hope that some day in a national institute, such as I have described, the all-round training which is essential may be properly acquired by medical graduates desiring to enter this field.

But for its own good, I pray that neurological surgery may never get so far from the home of general medicine and its immediate parent, surgery, that there will be any estrangement or any possibility of its being shut out of doors when the time comes for its return.

"All we like sheep!" The U. S. Public Health Service has just bought 2500 sheepskin coats for the tuberculous patients in its hospitals so that they may be able to sit in the air and the sun this winter. It's the fresh air that counts.

REHABILITATION OF THE UNDERNOURISHED CHILD.*

BY J. P. KOEHLER, M. D.,

MILWAUKEE.

Undernourishment or malnutrition is a relative term and may be applied to almost any one under certain conditions. Although weighing 180 pounds while in college, I was continually reminded by the football coach that I ought to weigh about 190 pounds in order to play my best game. At the present time I weigh a great many pounds over one hundred and ninety pounds, and yet if by chance I should fall into the hands of cannibals they might see my possibilities and decide that, for my height and age, I should weigh a little more. While there may not be a difference of opinion among medical men when it comes to individuals of my weight, yet there is a great difference of opinion when it comes to classifying children according to their nutrition.

There are some people who call every child undernourished, that is, below normal weight, and there are others who ignore malnutrition as long as the child can be up and around. If we must have extremists, it is better to err on the safe side and treat every child under normal weight for malnutrition, than to consider malnutrition normal because it is so common and in that way overlook it entirely.

Undernourished children might be divided into three or four classes, just as patients who are suffering from some other slow but progressive ailment. We might call those that are from five to ten per cent underweight, incipient cases; from ten to fifteen per cent, moderately advanced; and fifteen per cent up, far advanced.

In making the classification, however, other factors than weight should be considered. The general appearance of the child, condition of the skin, muscular tone and development, facial expression, voice, vigor, interest and attention must all be considered. Some children may be in the incipient class, if weight is the only consideration, and yet be in the far advanced class when their general well-being is considered. No two men may grade a group of children exactly the same, but that is no reason for discouragement, because we also find a great difference of opinion on such common defects as infected tonsils, bad teeth and defective vision, yet we go right on looking for and treating these common defects.

In this paper we shall center our discussion mostly on the children that are in the moderately and far advanced classes. This does not mean that the incipient cases should be overlooked, because, like other diseases, malnutrition can best be cured when treated early. The more severely undernourished we find a child the more difficulty we will have in making it gain.

According to the findings of various organizations in different parts of the country, we have at least fifteen per cent of our children suffering from an advanced form of malnutrition, which means that there are about three million undernourished children in this country and about one hundred thousand in Wisconsin. Before telling you how to rehabilitate these thousands of undernourished children, I wish to discuss briefly the causes and effects of malnutrition.

Two of the most common underlying causes are poverty and ignorance. About ten per cent of all undernourished children are insufficiently fed on account of a limited financial income. While malnutrition is very common in well-to-do families, nevertheless we must not forget the fact that poverty is a cause of malnutrition. Ignorance, no doubt, is the cause of more malnutrition among children than any other one factor. Parents are ignorant of what are proper foods, of how to buy the most nourishing foods, of the need of regular meals, of the harmfulness of tea and coffee and of the necessity of teaching a child good health habits.

More specific causes of malnutrition are heredity, improper diet, faulty sleep, insufficient rest, defects and disease. Heredity does not play as important a part as most of us think it does, unless the child inherits some disease as syphilis or a tendency toward some disease, as tuberculosis. We know that when babies are first born, those of thin parents are no more under weight than those whose parents are normal or over weight, and I see, therefore, no reason why heredity should be blamed when children who are well nourished when born become thin after the second or third year of life. Next to air, food is the most vital to a child's development. Whenever the quantity of food actually needed, for some reason or other, is not ingested by the child, malnutrition is bound to occur.

The kind of food is quite as important as the quantity. The manner in which the food is prepared and the training of the child as to when and how to eat, are also closely related to malnutrition. Insufficient sleep and rest are responsible for a great deal of malnutrition. Our forefathers, when children, did not have much to do evenings, so they went to bed early. During these days of automobiling and picture shows, children are going to bed at nine, ten and eleven o'clock instead of seven, eight and nine o'clock. Children getting only eight or nine hours of sleep when they should be getting ten or eleven hours, will ultimately have to pay the price, which is usually loss of weight and all that goes with it. These same children that sleep so little as a rule are also the ones that do not rest enough. They are on the go all day and never take time to relax.

Adenoids, infected tonsils, defective teeth, defective vision and tubercular glands are all very often the cause of malnutrition. As a rule, an undernourished child has about five physical defects to one in a well-nourished child. As long as a child is absorbing pus from its teeth or tonsils it will be almost impossible to keep it up to normal weight. Malnutrition has detrimental physical and mental effects. Undernourished children, as a rule, are nervous, irritable and restless. They are the ones, if not properly treated, that will develop into the class called the physically unfit, of whom we found so many while examining our young men for war service. The undernourished child is also more susceptible to infectious diseases, more especially tuberculosis, and when it does contract a disease it has greater difficulty in overcoming it.

I believe that there is also a close relation between malnutrition and backwardness in school. Children in our nutritional classes in Milwaukee improved mentally as soon as they began to gain weight. Children who were listless began to be more interested in their school work after they made a gain of several pounds. Some children who were not in the nutritional classes noticed that those who were, improved in arithmetic, and asked if they might not have milk and crackers so that they could do their arithmetic more easily.

Since there are so many undernourished children in our country, state and our cities, whose present as well as future is uncertain on account of physical and mental handicaps, and since there is no other disease or ailment whose causes and effects are better known and whose treatment is more successful than that of malnutrition, I feel that it is time for us to recognize the undernourished child as a sick child and to treat it accordingly.

The first thing necessary in the rehabilitation of the undernourished child is to make a correct diagnosis of malnutrition, which can only be done by weighing the child and making a thorough physical examination. Scales are comparatively inexpensive, and I see no reason why every school should not have at least one good scale for the periodic weighing of its children. For all practical purposes, the children may be weighed in their school clothes. A class of fifty children can easily be weighed and measured in twenty-five minutes, and no room can spend twenty-five minutes per month to better advantage. Special weight charts should be kept in each room, upon which the monthly weights should be entered. Where a child loses or fails to gain for two consecutive months it should have a special examination in order to discover the cause if possible.

After the undernourished children have been discovered, every effort should be made to discover the reason for their undernourishment. If it is due to poverty and all that goes with it, an effort should be made to increase the family income either by increasing the earning capacity of those working or by putting in aid. If defective teeth, adenoids or infected tonsils are present, no satisfactory results can be expected until these causes are removed. It is not uncommon for a child to reach its normal weight very rapidly after having its tonsils removed or its defective teeth corrected. If nothing can be found to account for the malnutrition, a Wasserman should be made.

One of the most effective methods of dealing with malnutrition is the nutrition class. These nutritional classes have been conducted in various parts of the country and were conducted on rather a large scale under my direction by the Milwaukee Health Department. Nearly every public and parochial school in Milwaukee County has been provided with a scale by the Junior Red Cross. Last February we established special nutritional classes in thirteen public and seven parochial schools. We enrolled in these classes mostly children suffering from an advanced form of malnutrition. We had from forty to eighty in a class, with a total of about twelve hundred. These chil-

dren were weighed regularly once a week. Each child had its own weight card, which was so arranged that even the youngest child could see what it should weigh, what it actually weighed, and how much it gained or lost each week. Golden stars were awarded each week to all children gaining, special pins given to ten in each class making the largest monthly gain, and medals to all who reached their normal weight. With very few exceptions, the children immediately became very much interested in their weight and were ready to co-operate with us by eating what we told them to eat, resting and sleeping more, and in fact, ready to do anything to get fat, and in that way win a prize. Each class was met by me every two weeks and repeatedly reminded of what to do and what not to do to get strong and well. Parents were also invited to attend these health classes, and in some schools we had as many parents as children attending. Home investigations and home instructions were taken care of by the school nurse.

In order to train children to drink milk, and in order to give them additional food, we gave every child eight ounces of milk and two graham crackers every forenoon. Some of the cases that did not gain satisfactorily received milk and crackers both forenoon and afternoon. Each child was requested to hand in a weekly report of what it ate, how much it slept and rested, and answers to many other questions vital to health. At the end of eighteen weeks we found that eighty-eight per cent of the children had gained something. Fifty-six per cent had made more than the normal gain for that period. The average gain per child was one and three-fourths pounds, according to our records, but in reality the gain was much higher, because when we first weighed the children in February they wore winter clothing, while when we last weighed them in June they wore clothing on an average of at least two pounds lighter per child. We can safely say that the average gain was over three pounds per child. The average gain for normal children for this same period is about two pounds.

While the results obtained may not appear sensational, and even discouraging when we think of the 160 children who not only did not gain but actually lost weight in spite of our efforts; nevertheless, I feel that every minute of time and every cent of money spent on these undernourished children was very well spent, and no doubt helped many children to put in the "knockout blow" against tuberculosis or some other slow, insiduous disease. About forty out of the 160 chidren that lost weight were enrolled in a special nutritional class, which was conducted during July and August at the Lapham Park Fresh Air School by the Health Department. These children came in the morning and went home in the evening to various parts of the city. They were served with a noonday meal, morning and afternoon lunches. They were given health talks and a certain amount of exercise in the form of play and recreation.

They were required to rest at least two hours every afternoon, which I consider next to food the most important factor in the treatment of malnutrition.

Six out of the forty children reached their normal weight within six weeks, which meant an average gain of a pound a week. With the exception of two or three children, all children made more than the average gain, which is about eight ounces per month. The average gain per child for this group of forty was about one and one-fourth pounds per month.

This experiment, as well as others, carried on by the Milwaukee Health Department, must convince the most skeptical that undernourished children can be made to gain, if we treat malnutrition as seriously, intelligently and intensively as we treat other dangerous diseases.

When we know that plenty of rest, fresh air, good food, supervised play and proper medical supervision are able to rehabilitate undernourished children, there is no reason why all children suffering from malnutrition should not be provided with these essentials.

Nearly every large school has a class for mentally subnormal children and I see no reason why it would be impractical to have a special class for children that are physically subnormal. If fresh air schools, with their rest periods, lunches, open windows and repeated medical examinations, are good for tubercular children, why not have a fresh air room in every school for pre-tubercular or undernourished children? More time and money should be devoted to the school lunches. Children compelled for various reasons to have a very poor lunch at noon, either at home or in school, should be provided with a good, nourishing hot meal in school for a nominal price.

There is a great movement on foot at the pres-

ent time to make our school system more efficient. Whether this will simply mean more teachers and more schools of the old system, or whether it will mean that greater emphasis is to be laid on the essentials of life, which include hygiene, sanitation, food, air, rest, recreation and health, will depend a great deal upon you men gathered here today.

Our schools will never be efficient until they turn out pupils at least as physically fit to fight life's battles as they are mentally. No child will be worth much to itself or to the community unless it leaves school with good health and with sufficient knowledge to keep it.

PUBLIC HEALTH PROBLEMS OF CHILDHOOD AND HOW THEY MAY BE ATTACKED.*

BY C. A. HARPER, M. D.,

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The health and welfare of a child is largely associated with health education and efficient health administration of the commonwealth. It is not in itself a distinct problem from the health problem as a whole, but certainly as an identity it stands today the most important big issue with which we have to deal in promoting efficiency and conserving life. Of recent years in Wisconsin there are born alive annually about 60,000 babies. There are 1,686 babies born dead, or 28.6 still-births per 1,000 live births: 1,108 die during the first twenty-four hours; 1,783 die during the first month and over one day, or 2,891 die under one month; during the first year of life there are 5,048 deaths, or a rate of 85.5 per one thousand live births. The United States stands eighth from the top in infant death rate under one year of age in fourteen countries classified. The Government reports for 1918 show the loss of 250,000 babies annually, most of them under one year of age, and 16,000 women die largely from lack of skilled medical and nursing care at the puerperal period. Of these maternity deaths, 7,500 result from puerperal infection and the balance, 8,500, from causes considered preventable. According to the Federal Children's Bureau report, a needless death of a mother occurs every thirty minutes and 500 babies die every day. It is readily seen that the bearing of children is a most hazardous undertaking. One of the larger insurance companies in the United States from a selected class of mothers registers a maternal death for every 186 confinements and finds that one baby out of every 22 births is born dead and one out of every 25 live births dies during the first month. In certain localities of this country (too few in number) where women receive efficient pre-natal care and advice, two women instead of five per 1,000 confinements die; 12 babies instead of 45 are still-born in every 1,000 births, and 10 babies instead of 45 are still-born in every 1,000 births and 10 babies instead of 40 born alive die under one month of age, lowering the mortality of mothers 60 per cent, babies born dead 78 per cent and deaths under one month 80 per cent.

There are many angles from which this unfortunate condition can be attacked. In broad terms, it calls for more serious consideration on the part of the medical and nursing profession, and above all, the people of the country must learn to consult and co-operate more fully with the doctors. The big question in the health problem is how to obtain this universal co-operation. Maternity mortality can be reduced by having every expectant mother, be she a primipara or multipara, consult a physician frequently from the incipiency of pregnancy until delivery of the child. This will materially do away with the 8,500 deaths reported by the children's bureau under the preventable class. The physician, when consulted, should advise carefully and thoroughly concerning the health of the patient and lay special stress on diet, exercise, care of the nipples, elimination, frequent examination of the urine and blood pressure. This will aid to secure the birth of a full-time child and bring the baby into the world in as healthy condition as possible. It is a comparatively easy matter "to keep a well baby well, to develop a healthy child from a well baby and a sturdy, useful citizen from a healthy child."

Babies should be breast-fed whenever possible. Only when the impossibility to nurse the baby is known should the mother be permitted to use artificial feeding, and therefore endanger the life of the baby fivefold. Hospitalization of the mother during confinement should be encouraged. In order to make this more successful better instructions should be given the mother. Mothers see but little

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of their babies while in the hospital, and therefore get little practical knowledge in caring for their offspring during their hospital stay. After ten days or two weeks she returns home and finds herself at a loss, in her weakened condition, to properly care for her child. By proper and careful advice on the part of the attending physician during the patient's stay in the hospital or her confinement in bed, this can largely be overcome. More babies, therefore, will continue to be breast-fed and many digestive disturbances will be avoided. I firmly believe that a specific charge for the confinement alone is extremely objectionable. I therefore strongly urge that compensation for confinement work be made to cover the care of the mother from the beginning of pregnancy and until she is safely over her confinement and both mother and baby are in best condition possible. At present the very rich and frequently, in large cities, the very poor are receiving such attention. The great middle class, the backbone of our Government, constituting about 90 per cent of our population, are seriously neglected in this respect. The medical schools must emphasize this plan of procedure more strongly in their obstetrical courses and the practicing physician of today should impress this upon all his parturient patients, that their failure to comply with his instructions will give him just grounds to refuse to deliver her at time of confinement. It is needless to elaborate on the beneficial results to mother and child if this plan is put into absolutely general practice. Maternity deaths will be so reduced that the odium now prevalent in many localities on the medical profession will be removed. The midwife problem will be practically solved by the process of elimination. The 13,800 confinement cases annually cared for in this state by the midwife will then legitimately come to the physician. Not until the medical profession, however, fully appreciates its moral and scientific responsibility in these cases will midwifery be a lost art.

Assuming that pre-natal and natal care of all mothers has been properly applied, each baby will have such start in life as it is justly entitled to. We are further assuming that the mother has been given specific instructions concerning the nursing, bathing and dressing of her baby; that the baby naturally should sleep a great deal of the time; that the hours of nursing should be regular and, under no circumstances, should the baby be disturbed for exhibition at the solicitation of relatives and supposedly kind friends.

It is generally conceded that the tenth or eleventh month is the proper time to discontinue breast feeding. Mothers should be made to realize that the condition of the baby should determine the weening of the baby rather than following any fast rule. Many babies from improper feeding become ill at this period of life. Parents frequently assume that any and all food material on the table for the adult members of the household may be fed to babies of this age, especially if the little tot apparently desires or will take such food. They forget that milk is the mainstay food for babies and children of pre-school age as well as a substantial part of the healthy diet for all individuals through life.

It is generally observed that children of pre-school age fail to get the care they are entitled to. They come only indirectly under the supervision of the school nurse or school medical advisor. The public health nurse during the school year is more concerned with children of school age than any other class. She is frequently called upon to give advice and recommend many first-year school children to their family physician for care and treatment. If proper supervision had been given these children during their pre-school career fewer remedial measures would be necessary after such children enter school. The school nurse, as well as all public health nurses, should be employed during the entire calendar year. Much of the follow-up work could and should be done during the summer months. It is also the best time to apply corrective measures. Children of pre-school age should be prepared physically, mentally and hygienically for their school year course. The school furnishes the center wherein many children may be examined at one time with the least expenditure of effort. How, then, are we going to safeguard as thoroughly as we should these pre-school children? To me the health center or health station established in communities, readily accessible, furnishes an important solution to the problem. The question often comes up, "What is a health center?" Many definitions have been given, and one large welfare organization states "It is the physical headquarters for the public health work of a community. . . . It constitutes a businesslike way of associating health activities, both public and private, under

one roof . . . bringing together important but hitherto independent health campaigns . . . and above all the vitally necessary effort for the conservation of child-life." This is one of the newest and I believe one of the most important fields of public health work. It is the center for instruction on pre-natal and natal conditions. It unifies various health agencies. It extends health and education and brings about remedial measures to children of pre-school age as well as school children. It brings the problem of health home to the individuals as well as to the community. In the final analysis public health, in order to be most efficient, must be brought close to the people. In concrete and general form these centers are centers for health education. A number of the cities have had such centers for many years. They have proven their value and experience has shown us they are readily applicable to rural communities and equally needed. At present there are 28 health centers or clinics in Wisconsin. Five strictly rural clinics have been established and 20 small town and city clinics outside of Milwaukee are in operation. Schoolhouses or town halls furnish the housing. The equipment for maintaining such centers is not large or expensive. The rural population in a considerable number of instances have shown themselves interested and willing to co-operate. I believe the only additional need to make them all successful is the public health personnel and spirited co-operation on the part of the medical profession. The public health nurse is nobly doing her part. There are too few of them, however, and they also need medical advisors.

The health departments are not large enough in personnel, especially in rural districts, to meet the demand. The medical men of Wisconsin should, and I believe will, arise to meet the occasion. Wisconsin never fails to do her part when the public welfare is under consideration. Wisconsin doctors have the Wisconsin spirit. It requires interest, moral support and a few hours' time occasionally in co-operation with the public health nurses and lay officials of such health centers. People generally calmly put their lives in the hands of the medical profession, thereby placing on their shoulders a most grave responsibility. In many localities the purpose of health centers is not well understood. The physicians of the community should, therefore, endeavor to explain their purpose. At meetings in rural districts, probably monthly, every encouragement should be set forth so that full attendance of the lay population will result. Practical talks should be given by doctors and nurses upon the simple health problems of life. This will stimulate special interest on the part of expectant mothers. These problems should take the form of a round table discussion and every encouragement should be given the lay people to ask questions concerning "how to keep well." As the people become interested the medical work will progress accordingly.

In a certain center in New York City only 6 per cent of the school children were treated for defects. After a health center had been established in that locality over 80 per cent of the school children consulted physicians concerning health conditions, many of whom required remedial measures. It is now an established fact that when people generally learn to appreciate the advantages gained by healthy living conditions that they appreciate the medical profession accordingly and will consult them proportionately frequently.

For the past several years much attention has been given to school children, undoubtedly more than at any other time in the history of public health administration. Educators have become fully aware that health of school children is of primary importance to a successful educational system, realizing that malnutrition and physical defects frequently handicap a child so seriously as to prevent him from making the proper grades and, therefore, an efficient pupil. There is at the present time complete co-operation between the educators of the state and the public health officials. The time is near at hand when the teaching of fundamental principles of healthy living will be a regular part of the school curriculum. Most of the larger cities have and have had school nurses. Wisconsin, the first state in the Union, has provided for county public health nurses. The law provides that on and after July 1st, 1921, each county shall employ one or more county public health nurses whose work will be confined largely to rural districts and small villages, covering the territory of the county wherein there is no local public health nurse employed by the school board or local health officials. At the present time there are 35 counties employing one or more public health nurses, or a total of 40 such nurses so employed. Four additional counties have appropriated funds and are now waiting for

qualified nurses to take positions. From indications, one or more public health nurses will be employed in practically every county in the state before the compulsory feature of the law goes into effect. I feel that this is certainly a most gratifying situation. These nurses are naturally concerned with the public health problem in the broader sense. During the school year, however, much of their time was taken up in the examination of school children; during the school vacation their activities will be devoted largely to follow-up work and organization of health centers or health stations; their work thus far has been most valuable in stimulating proper appreciation for public health work on the part of the citizens of the state. The parents of school children, when found defective, are notified and advised to consult their family physician for further examination and the application of corrective measures when necesasry. It is shown that a very large percentage of parents have followed the recommendations of these county public health nurses.

In conclusion, then, this is a short outline of the health problems of childhood and the machinery recommended to meet the conditions so greatly demanded. To make it successful the physicians of Wisconsin should give very careful consideration to the work of the public health nurses and when children come to them for examination as result of references made to parents by one or more of the public health nurses such children should be very thoroughly examined and remedial measures, when required, should be advised and put into effect. No referred case should be treated lightly. These nurses are performing their duties as conscientiously as they know how and, therefore, should be given careful consideration. I firmly believe also, as a result of many years of careful observation, that the medical profession generally should be more considerate and explicit in giving advice and outlining plans of procedure for the improvement of the health of those who may consult them as result of illness, and especially advice concerning the betterment of the childhood population. It may often happen that certain conditions may appear trivial to the physician, yet, at the same time, they are serious in the minds of those who seek his advice. Therefore, such ailments should not be considered too lightly and sufficient time should be taken to explain to the patient his condition which to them appears to be a serious matter. The health authorities of the state are earnestly seeking the full co-operation of the medical profession in further advancing public health work and in return desires to co-operate with and uphold the work of the great medical fraternity. Without the co-operation of the large per cent of the medical men of the state, public health work cannot be as efficient as it should be. The success, therefore, of the whole problem largely depends upon the willingness of the medical fraternity to, in part at least, revise their ethics and give full consideration to the principles of "how to keep well" and "preventive medicine." This, then, will largely help solve the problems of childhood in this state.

Summarizing the problems of childhood as outlined in this paper, I desire to lay emphasis on three important fields of activity. First, pre-natal and natal care of mothers; second, health centers as an agency in better improving the conditions of children of pre-school age; third, the universal application of the principal of public health nurses and medical advisors for the school population of the state of Wisconsin.

SOME APHORISMS OF THE ENDOCRINES.*

FOR THE BETTER INSTRUCTION OF THE INSTRUCTORS IN SOCIAL AND POLITICAL ECONOMICS.

BY HORACE M. BROWN, M. D., F. A. C. S.,

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No discovery in any field of knowledge is of value until it finds its application to man for the benefit of mankind. The gateway for the application of such knowledge is most frequently through the science and art of medicine, but in the case of the application of our present knowledge of the endocrines, that method is inadequate; and if results are to be obtained that shall be of value to the race, the teachers of economics must share in our service of application, and we must first teach them.

The teaching of economics in all its branches in our universities is in a great degree false and inadequate, for the reason that its premises are not in accordance with now recognized and established physiological knowledge.

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The artisan does not attempt to produce a satisfactory product, except he be thoroughly familiar with the raw material with which he works. Does the professor, whose material is the human animal, know the newer facts in regard to the physiology and psychology of *man;* the animal that is *his* raw material? If we are to judge from the products of much professorial reasoning, the answer is, *"No"!*

Has the time arrived for a new Vesalius, or a new Harvey to hold up the lantern of knowledge that the professor's mind may be illumined and made receptive for a new and better basis for his teaching?

All human acts are the result either of instinct, or of conscious or unconscious cerebration,—what is called "thinking."

With the first—Instinct—I have nothing to do in this paper. My thesis will be "With what do we think?"

Among the earliest theories with relation to the use of medicine for the treatment of disease or for the purpose of changing the dispositions of men or women, appears the thought that by feeding an individual parts of an animal that was particularly celebrated for fleetness of foot, or for bravery in the fight for life, the man thus receiving this flesh or parts of such an animal would soon begin to partake in his character of the characteristics of the animal whose flesh had been fed to him.

This belief has persisted in the history of Medicine throughout all time and is common today in the beliefs of many peoples. It was perhaps from the observance of this belief among the people that Theophile de Bordeu in France, about the year 1750, brought forward his theory that every tissue and gland of the body secreted its own particular and specific substance, and that every such substance was essential to the welfare of the body.

So far as we know, this was the first time that the idea of specific function was attached to the secretion or production of any of the tissues, and it was the beginning of the steps that led after a period of a little over 125 years, to the investigations that have given us our present knowledge of the ductless glands, or the endocrine systems, and of the tissues and organs which take so important a part in the maintenance of function and of growth in our physical economy.

It is not my intention to go minutely into the history of the development of our knowledge. If this paper is printed there will be attached to it a chronological list of the important investigators, the date of their work and the advances they had made in this line of study.

It is my purpose to show as briefly as may be possible what the endocrinie organs and tissues are, their various classes, and to renew in your minds, perhaps, your previous knowledge of the important position they play in the processes of cerebral activity.

The glands which produce a special secretion which activates some other organ or a series of organs, at a distance from the gland or tissue producing the secretion, may be classed roughly in three orders. First, those that are entirely ductless and which produce but one secretion, which is poured directly into the blood. These are the supra-renal capsules, the thymus, the thyroid, the para-thyroids, the carotid gland, the pituitary body and pineal gland, and the spleen. Second: Those glands which produce secretions of a similar character, but which have ducts for the transmission of other secretions produced by them, are the liver and the pancreas, in the latter of which are lodged the Islands of Langerhans. Third: Those which have mixed function, but which are not to be classed directly in either of the two preceding divisions, are the hormonic portion of the stomach and mammary glands, the ovaries and uterus, at certain times the placenta, the testicles and probably the prostate.

There are undoubtedly other areas, glands or organs in the body which perform endocrinic functions which are yet to be discovered.

It will be seen that these organs belong to two groups, each having its own special form of nerve supply. The liver and the pancreas and some of the organs of the mixed group are supplied and regulated from branches of the vagus, while the others derive their inervation from the sympathetic system of nerves. Nevertheless, each group is self-composed and is, therefore, called autonomic; the group supplied by the vagus being known as the "vagal-autonomic," while those glands which derive their inervation from the sympathetic nerve system are called the vegetative system, or the "vegetal-autonomic." Not all the organs or tissues which produce endocrine material or hormones are in constant function, as for instance, the endocrinic function of the uterus or mammary glands is limited to special times and

periods. Hormone arising from the placenta is only active during the period of gestation, but generally speaking, the secretions of the organs of the two systems are being constantly produced and being sent into the body by way of the blood, to activate distant organs in the performance of their own special function.

It is to be remembered that function of these hormone producing or endocrine organs is one that is performed entirely without consciousness, volition or control on the part of the cerebrating portion of the nervous system.

There is always in existence in the normal individual a condition of control called the "hormonic balance"; it being that state of equilibrium which exists between the stimulative or irritative action of the products of the endocrine organs of the vegetal-autonomic system, and the inhibitive action of those of the vagal-autonomic system.

The special products of the vegetal autonomic system, like the thyroid, para-thyroid and the adrenals, are mostly stimulants to function of distant organs. Whereas the endocrine products of the vagal autonomic system are inhibitors. The foregoing general statement being granted, and the intimate relation existing between the function of these specific hormone producing tissues and organs, and the organs and tissues that are acted upon by their products, being understood, it will be clear to you that there is apparently no organ in the body which is not in some degree dependent for its functional activity upon stimulation sent to it by the hormonic substances derived from endocrine glands or tissues placed at a distance from it.

It is not the purpose of this paper to take up the problems of the varying results produced upon the body as a whole by the excessive action or continued diminished action of any of these glands. You are all of you familiar with the literature of hypothyroidism and hyperthyroidism, of the results of hypo-epinephrism and hyper-epinephrism, and of defective action of the different parts of the pituitary body. That part of the subject of the functioning of the endocrine organs does not relate to the thesis of this paper.

It is my purpose to draw your attention to the particular modification of the processes of thought that are the result of the failure of action of any or of all of these endocrine organs and to place before you, if possible, the problem which confronts all our past system of political and social economy which has been based upon a theory that human motives and human acts had their origin in a brain which worked by itself, uninfluenced by any other organs in the body.

It is not my intention to discuss the problems of conditions of mentality that come under the head of the insanities, or those that are the result of retrograde metamorphoses of the structures of the cerebrating organs in the skull, but only to attempt to attract attention to the one outstanding fact that the nature or quality of human ratiocination, is dependent upon the harmonious functioning of the brain and the endocrine organs.

Let us examine, for a moment, an instance of what I mean by this. It has been shown that any emotion, passion, pain or grief stimulates the production of the product of the supra-renal capsules and that accompanying every shock, whether physical or mental, there is an increased amount of the product of the supra-renal, thrown by it into the blood. No doubt the endocrine material from many other endocrine organs is in some degree also produced under such circumstances. It is probable, in fact well-nigh proven, that the presence of the supra-renal juice in the blood stimulates in a great degree the emotional portion of the brain, and it is safe to say that emotion produces intellectuation; so we are secure in stating that there can be no intellectual cerebration that has not been induced first by an impression, then by emotion. The series of events being impression, percept, emotion, concept, intellectuation, action.

Even as there exists an hormonic balance between the functioning of the two autonomic systems so also there must be—in order that intellectuation can take place with anything like normality—a balance existing between the capacity of cerebration and the endocrine impulses, that is produced upon the more intellectual side of the brain through its stimulation of the emotions.

We know perfectly well that increased function of certain of the endocrine glands produces strange deformities in the processes of growth of the tissues of certain parts of the body; e. g., the effect of a diminished supply of the secretion of the anterior portion of the pituitary body produces those strange symptoms known as hypo-pituitarism. It is quite as certain that the effect of an excessive supply in the blood of the products of the endoc-

rine glands brings about modifications of the functioning faculty of the brain, just as they produce modifications of growth and function of other portions of the body.

The literature pertaining to this subject is rapidly increasing and the laboratory work tending to prove my last proposition is not wanting. What I have said thus far will serve as a foundation for the proof of some of my aphorisms in their entirety and partially for all of them.

An understanding of this relationship that exists between the action of the products of the endocrine glands upon the emotions and intellectuations produced in the brain, furnishes an excellent basis for an understanding of the character of that group of men who are called "high-class morons"; although the term in its strict meaning does not apply to them. One has but to examine the figures and faces of the greater number of men and women who are engaged in promoting radical, anarchistic, socialistic and bolshevistic theories, to recognize that their faces show the stigmata of physical changes which are due in some degree either to hyperaction of the endocrine system or to a hypoaction of that system. It is a great pity that such men and such women are of a sufficiently high grade of intellect as to be capable of impressing their absurd notions of social order upon the youth of our country during the time when it is seeking education and culture in our universities.

The sophomoric age of young men and young women is the one during which their brains are most affected by the functioning of the sexual endocrines and when, with their heads full of romance, they listen to the lectures of their professors—whom they are led to believe are very wise men,—they absorb all sorts of absurd notions of social and political economy which are founded upon theories which give no recognition to the endocrine system of the body and are enunciated by men utterly ignorant of the physiology and psychology of their production and function.

The writings of some of the professors in some of our universities upon economic subjects give evidence of such utter ignorance in regard to matters depending for their solution upon a recognition of the need for harmonious function between the endocrine systems of the body and the cerebral part of the nervous system, that one, even with a superficial knowledge of this need, stands astounded at the professorial ineptitude.

At this time it is impossible for any man to dare to state that thinking is done by the brain only. But these theories are extremely plausible and to the romantic mind of the emotional youth and upon those peculiar minds of certain races, —among others the Semitic and the Celtic,—that are characerized by a greater love for emotion than for logic, they leave a lasting impression, and result in the effort on the part of the disciples of the plausible but ignorant speaker, to carry out his theories in the most absurd transgressions of social order and in threatenings of destruction of the civilization that has been builded upon a foundation of the experiences of all the ages.

The present widespread disturbances of social order are the direct result of the teachings of men, presumably qualified to lead, who, themselves suffering from a lack of balance between endocrine and cerebral function, teach theories of political economy, ethics and social economics, while utterly ignorant of the physiology of the body and of the relations of the endocrines to psychology. The present economic situation in the world is the direct outcome of perversion of endocrinic activity through exaggeration of the emotional side of cerebration at the expense of the intellectual side; for endocrinic activity stimulates emotion; and again emotion creates endocrinic activity and a vicious circle is formed.

It is unfortunate at the present time, when it is necessary that every educated person should be prepared to stand firmly upon a foundation of common sense in regard to social order, that the teachers in our universities promulgating such theories as I have mentioned, have the opportunity to be heard by so large a number of young women. For, say what you will, a woman remains always a woman, and it is an essential and unchanging factor of her nature, that her emotions are more precious to her than her intellectuations. The results of such teaching falling upon the plastic nature of the naturally emotional part of humanity, are leading to endless complications in social life, and while these complications can have no lasting term of existence through any great period of years, yet while they do last they are productive not only of great disorder, civic and moral, but also of notable degeneracy in the attitude of women toward those things which are naturally

their normal function and normal purpose for existence.

We of our profession are being constantly brought face to face with some of the problems which are the result of the persistence of endocrinic action upon the emotional side of women after the menopause. Some of these are extremely amusing and some tragic. It has been my experience that women who reach the menopause go in one of three directions. The first and the greater number become the dear, sweet, lovely old ladies; another group, still feeling the effects of the endocrinic stimuli of the ductless glands, become distinctly sexually immoral; while the third group becomes entirely derailed. The mother instinct still persisting, they become meddlesome busybodies, useless interferers in everybody's affairs, wildly desiring newspaper notoriety, thinking it to be notability, and a reputation for prominence. This latter class form one of the curses of modern society, and there seems to be no solution for the problem which they present.

Yet we of the medical profession can possibly forgive them, for with our knowledge of the endocrine function of certain portions of their bodies, we recognize the spark of truth which was enunciated by the wise Arabic philosopher Moarbeda, and the philosopher of Bologna, who said their faults should be forgiven them, for "they were the work of the womb."

Nor are men free from the effects of persistence of sexual endocrinic function, after the age when the spinal impulse is diminished. All about us we see instances of "old men in love"; with irritated prostates and partially functioning endocrine organs leading them to believe that they are in love, when really they are being deluded by the endocrine function and the irritable bladder. *Both disturbances might be removed by a proper use of a catheter.* If we are permitted to reason backward, from effect to cause, we shall conclude that the acts of many men with irritable prostates, even those in very high places, are the result of loss of endocrino-cerebral harmony. I sometimes think that we are now living under a prostatic administration, in an era of dominance by fat-thighed men and skinny-hipped women.

Again, as a result of the persistence of sexual endocrine production, we often see instances of the crime of the old man upon the body of the young girl or the little child. It is a problem. Is he to be blamed? It is not his intellect that is acting, nor the lumbar enlargement of his spinal cord, it is a nervous and cerebral system entirely out of balance owing to the loss of harmony in the endocrino-cerebral functions.

One is appalled when one stops to consider what the world, and particularly our own country, has suffered since the time of its establishment, from a fixed belief in the political philosophy of Jean Jacques Rousseau and his *ideas* of *equality,* and from the imitating philosophy of Thomas Jefferson, as to mankind. The former a sexual-endocrinic pervert, and the latter a blind and worshiping follower of the former's errors.

In the statement of the aphorisms that I shall draw from the points in regard to the functioning of the endocrines in their relation to cerebration, I shall endeavor to point out some of the follies of those two men, that have been the foundation of absurd political theories, not only of our own country, but of the great group of anarchists, socialists, communists, bolshevists, *et id genus omne.*

It is a curious thing in the functioning of the endocrine organs in their relation to cerebration that the predominant and always recurring factor in every instance of disturbance of balance between the endocrines and the cerebrum, is the prominence of the sex factor. No one of the great social or politico-economic schisms that has ever appeared has been without its predominating sex problem. And for him who has read Mosheim's Ecclesiastical History, it is amusing to see how, throughout the ages since the beginning of the Christian era, with each century there has been from three to five outbursts of social or political disorder all running true to form, crowds of people following the lead of some perverted endocrinic maniac, whose ultimate purpose seems to have been to establish a cult for carrying out some special form of sexual or social perversion.

I beg now to offer for your consideration, and perhaps condemnation, a series of aphorisms which I have formulated as a result of my reading, and the basis for which I have given you in what has gone before.

APHORISM NO. 1.

Reason by cerebration alone can take place only in the absence of any functioning of any of the

endocrine organs, and the latter condition is not possible during life. Ergo: purely cerebrational reasoning is impossible, unless reason be possible after death.

APHORISM NO. 2.

No Man is Born Free.

Every human being is born into the world shackled by his inherited quality of presence of normal or abnormal endocrines, and is a prisoner to their capacity for securing development of body and brain.

He is throughout his life in the custody of his surroundings, these the result of forces over which he has no control, and which he can make conformable to his wishes, only by limiting his desires to the conditions which surround him. His *Political Freedom*—the outward manifestation of which is his privilege of the ballot—is more often an expression of an emotion than a reasoned conclusion. Through life he is the captive of his emotions, not their ruler. He is born into a tyranny from which he can never escape.

APHORISM NO. 3.

No Two Men are Created Equal, Either Before the Law or Otherwise.

1. The inevitable difference of inherited tendency, and post-natal differences of development of the endocrine organs, in any two individuals—all other factors of existence being eliminated from the argument—make it impossible for any two individuals of the genus homo, to be equal in any capacity.

2. Before the law no two men are equal, because the law is a thing of human production, and may be compared to a ready-made suit of clothes; it fits nobody exactly, but it approximates the fitting of everybody. The nearer it approaches fitting any two people, the nearer it comes to giving to that particular pair "equality before the law." But it never quite fits, for after all it is a thing of human production, and the greater cerebro-endocrinic competency of one man makes him more capable of securing the better lawyer, than that of another.

Solon said: "Laws are like cobwebs; if any trifling or powerless thing fall among them, they hold it fast, while something weightier breaks through them and is off."

APHORISM NO. 4.

Equality of Opportunity is Impossible.

Opportunity unrecognized does not exist, and as the capacity to recognize is the *Result of Ability,* and ability the result of *Reason,* and reason the result of balance between, or of harmony between cerebration and endocrine function, any disarrangement of either in any one of two individuals destroys their quality of opportunity.

APHORISM NO. 5.

The sum of the experience of mankind throughout the ages is the only basis for social order. This experience has shown that the more competent individual must control the less competent, in order to secure the greatest good for both, and thus the welfare of mankind.

The reverse of this proposition would be unthinkable, and its functioning would destroy all progress.

APHORISM NO. 6.

The individual with the better condition of endocrine harmony is always the more competent. The individual with the greater perversion of endocrine harmony is always the less competent, both in body and in cerebrating faculty.

Thus: if this be true, competence for success in life is a physical matter, not one dependent upon pure mental capacity, for purely mental function or purely cerebral reasoning has no existence.

APHORISM NO. 7.

Man does not reason with his brain alone, but through the mutual and harmonious functioning of the contents of the skull and all of the endocrines of the two autonomic (vagal and vegetative) systems.

APHORISM NO. 8.

Any disturbance of any of these inter-related groups prevents cerebration in harmony with accumulated experience, and such cerebration, if acted upon to motivate action, is always destructive of social and political order.

APHORISM NO. 9.

Errors of endocrine balance in males and females of the species have produced many feminine men and more masculine women. That instances of special ability in individuals of the

masculine-female type have occurred, does not prove that woman can in any way function or take the place of man in the cosmos; nor does the converse of the sex conformation prove that man can take the place of woman. In both instances, the physical, physiological and psychical conditions are endocrinic abnormalities, and such types are in the mass failures in both sex characteristics.

However nearly the hen may approximate the production of a praiseworthy crowing, or however closely she may imitate the strutting of the cock, at certain times she must, whether she will or no, squat and lay an egg. This is a beautiful and most praiseworthy function, and one in the performance of which the cock would make a ghastly failure, and it is one, in the performance of which, the cock has no desire to rival the hen. Why should the hen wish to crow?

APHORISM NO. 10.

Any theories of social or political economy that are not founded upon a thorough understanding of the functions of the endocrines, in their relation to the determination of the characteristics of the individual, and thus the determination of the nature of the masses, are as houses builded upon the sands.

The artisan, to produce good work, must know the material with which he works. The artist must know his colors, the sculptor his marble. The privilege seems to be reserved only to the teacher of the vital theories of economics, social and political, to attempt to produce peace and happiness, by promulgating theories concerning the foundation for which he is strangely ignorant, and of the nature of the material that is to be acted upon by his theories, he is indifferent.

APHORISM NO. 11.

The quality of all cerebration, both emotional and intellectual, being dependent upon endocrinic and cerebral balance of function, and this balance being subject to constant derangement, the predicate of any postulate or proposition—except it be those of mathematics—is never conclusive, and therefore no theorem of economics is or ever can be apodictically (finally) proven.

APHORISM NO. 12.

Malingering both of bodily infirmity and of social discontent (and by this I mean exaggerated estimates of oppression, class consciousness, etc.) are evidences of endocrino-cerebral harmony derangement; and the latter is the most dangerous to society.

APHORISM NO. 13.

Because man does not think by cerebration alone, no society or social order that is founded upon the commonly accepted basis of the origin of reason can be maintained without the employment of force (compulsion).

The two fundamental laws that rule the destinies of all living things remain today as they were in the beginnings of time.

1. Get nourishment; 2, reproduce your kind. Nourishment stored becomes property and demands protection. Protection of the less competent individual against the desires of the more competent means resistance. To live without compromise and arrangement; without a more thorough understanding of the originating causes of our acts and a willingness "to yield that strength may be"; without an understanding of the need for the "Noblesse oblige" principle on the part of the more competent, means always the rule of the "law of Claw and Fang."

> "The good old-fashioned plan,
> That he shall take who has the power,
> And he shall keep who can."

And thus we come back to the philosophy of the "Golden Rule."

APHORISM NO. 14.

Compulsion (force) as a means of maintenance of the social order is always destructive and its action upon cerebration, through disturbance of endocrino-cerebral balance, destroys its own object by increasing the error of balance; or in other words, by bringing discord into the harmonious functioning of the cerebrum and the endocrines.

Thus the vicious circle completes itself and we find ourselves where we started and without a solution of the problem, except that the law of "experience of the ages" still holds, and in its presence theorists, reformers, uplifters, derailed menopausics and those who believe that they can make man good by making laws: if their endocrino-cerebral function were in harmonious atunement would cease their ill-considered maunderings, and perhaps retire like Tityrus to rest themselves "beneath the shade of some umbrageous beech," and leave the world to its solution of its

problems by the slow process of the attrition of time and by the accumulation of experience.

CONCLUSION.

If the aphorisms that I have promulgated are indeed true, and therefore defendable, the time has come when the teacher of ethics, and economics in any of its branches, must abandon his present notions based upon the idea that man is a thinking animal, acting upon the impulses that are the result of his cerebration alone, and accept the facts that are demonstrable in regard to the endocrinic origins of thought. Having done this, it is for the philosophers of economics to generate and elaborate a new system of ethics and economics upon the facts and not upon theories that have been rendered nugatory by the advances in physiological science.

I cannot close my paper without calling the attention of those of my hearers who have not given the subject of the endocrines much attention; to the colossal work done by our own Sajous of Philadelphia; to that monument of experiment and inductive reasoning that has come from the hands of Cushing of Boston, to the collection of clinical cases illustrated by Bainbridge of New York, and the summaries of the progress of endocrine investigation coming from the pen of Col. Fielding H. Garrison of Washington.

Socrates said that he knew nothing except the fact of his own ignorance. Perhaps I have exhibited my own, but I assure you that in this regard I am like Socrates, I am quite aware of it. I have proved nothing; I have not tried to; but I hope I have given some among you food for thought.

INVESTIGATORS AND AUTHORITIES.

Pliny and Caius Julius Solinus (III Century) Early description of cases of Pituitary disease. Polyhist. Cap. V.

Bedeu, Theophile de, (1767) advanced the theory that each tissue or gland secreted its own peculiar substance, and that each was necessary to life.

Claude Bernard (1843) discovered glycogen.

Moritz Shiff (1856) found excision of thyroid of dog always fatal.

Sir William Gull (1873) and Ord. (1877) described myxedema.

Robert Graves (1835) described ex-ophthalmic goiter.

Addison: (1849) Addison's disease.

Theodor Kocher (1878) first thyroidectomy for goiter.

August Reverdin (1882) proved possibility of production of operative or surgical myxedema.

Sir Victor Horsley (1884) repeated Reverdin's experience with monkeys.

Sir Felix Semon (1888) proved cretinism and myxedema identical.

Brown-Sequard (1889-1893) experimented with testicular extracts.

Opie, Ssobolew and McCallum (1892-1909) worked on problems relating to the Islands of Langerhans in the pancreas.

Eugene Baumann (1896) discovered iodine in the thyroid.

Ivar Sandstrom (1880) proved para-thyroids necessary for calcium metabolism.

Leischman and Halsted: (1909) Tetany and the parathyroids.

Oliver and Schaefer: (1895) Division of the pituitary.

Howell: (1898) Function of posterior lobe of pituitary.

Sajous: (1903) Work on the Hormonic organs.

Harvey Cushing: (1910) His work on the function and surgery of the pituitary body.

Up to the present time only Pituitrine, Epinephrine and Iodothyrine have been isolated.

THE BASAL METABOLISM IN HYPERAESTHETIC RHINITIS.*

(A Preliminary Report.)

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Hyperaesthetic Rhinitis is a generic term including a group of conditions which resemble one another symptomatically, but which perhaps have dissimilar etiological bases. Like asthma, anemia, dementia praecox, pneumonia — Hyperaesthetic Rhinitis is a group name. In this group are the commonly recognized conditions, namely, autumnal hay fever, spring rose fever, vasomotor rhinitis, hyperplastic ethmoiditis, etc. It is not the purpose of the writer to give a description of these various conditions, nor to attempt to classify them symptomatically.

For the purpose of studying our problem of the Basal Metabolism in Hyperaesthetic Rhinitis, a rather arbitrary grouping was agreed upon. It is as follows:

1. The seasoned type, Type A, *i. e.*, including Hay Fever and Spring Fever.

2. The hyperplastic ethmoid type, Type B, in which definite nasal pathology is demonstrable.

3. The type in which there is no constant, definite, demonstrable nasal pathology. Type C.

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*Read before the Milwaukee Oto-Ophthalmic Society, Dec. 21, 1920.

The problem is to determine whether there is any constant and definite change in the metabolic index in any or all of these three types. Whether hypothyroidism is the basis of only one type, *i. e.*, Type C; whether it is a hypo-thyroidism, or whether there is a general endocrine imbalance.

It is within the province of the clinical otolaryngologist to observe metabolism readings in the various types of hyperaesthetic rhrinitis, and draw conclusions therefrom. The other problem of determining whether we are dealing with a hypothyroidism in these cases or whether we deal with a general internal secreting gland disharmony, is a problem for the laboratory research scientists, and does not fall within the realm of the clinical observer.

The type of hyperaesthetic rhinitis with which this preliminary report concerns itself, is the type in which we find no constant and definite nasal pathology, except as described later.

The description of this type of the disease is as follows: It occurs most commonly in young females, although it is also observed in older women, and also in the male. The attacks come on regardless of the season of the year, without exposure to perfumes, odors, or irritating vapors. They usually occur in the morning, after arising, and are characterized by paroxysms of sneezing, which have been referred to as the machine gun sneeze. The patient sneezes from a half dozen to fifty times in one paroxysm. This is followed by a profuse, thin, watery, serous irritating discharge from the nose, soiling several handkerchiefs. The conjunctivae become more or less suffused and hyperemic. There may be only one attack. In the severe cases the attack may be repeated many times during the day. In the milder cases the disease may be only mildly annoying to the patient. In the severe cases the disease may lead to profound mental depression of the patient, and be the source of a great deal of worry. This mental state of the patient is of interest to us, and is perhaps of considerable significance and importance in the study of this condition. These attacks may continue for weeks and then subside, and again they may with annoying persistence last for many years.

Upon examination of the nose between attacks, we find that it appears practically normal except for the pallor of the mucosa, which we have all observed. During the attack and for a variable length of time afterward, the turbinates and the mucous membrane lining the septum are waterlogged. The tissues are pale, soft, and swollen. The thin serous discharge gives them a shiny appearance.

It is the belief of the writer that hyperaesthetic rhinitis of this type is an entity. The observations that have been made support this belief, but we must remember that the observations are based upon a limited number of cases, and that further systematic observation may altogether overthrow this belief. It has long been known that the administration of thyroid extract in Hyperaesthetic Rhinitis has led in certain cases to a most abrupt and dramatic cessation of symptoms. One grain of thyroid extract three times a day has in some cases within seventy-two hours stopped the paroxysmal sneezing and the discharge, and has changed the mental attitude of the patient from a depressed state to a happy, buoyant one. Withdrawing the thryoid therapy has, after an indefinite period, from a few to several weeks, brought about a recurrence of all the old symptoms, and then upon the administration of thyroid extract has again cleared up all signs of the disease.

We studied a number of these cases, and found that the blood pressure was subnormal. The metabolic index was low. On the other hand, upon measuring the basal metabolism in cases of hyperaesthetic rhinitis in which there was definite hypertrophy, and hyperplasia of the middle turbinates, in which there were definite pathological findings upon Roentgenographic examination of the paranasal sinuses, it was found that the metabolic index read within the limits of the normal. This leads to the supposition that there are at least two types of hyperaesthetic rhinitis, namely, the type in which there is a markedly slow oxidation of the tissues, that is, a low rate of basal metabolism, and one in which the oxidation processes are normal, and the basal metabolism is within normal limits. It is generally believed that the basal metabolic rate is dependent upon quality and quantity production of the thyroid secretion. Therefore, it is logical to look upon the type of hyperaesthetic rhinitis which I have for convenience sake labeled Type C as but a symptom of hypo-thyroidism.

It devolves upon the internist and laboratory worker to determine by careful experimentation whether this deduction is justifiable or otherwise.

It is really a question, more or less, of academic interest whether it is a matter of hypo-thyroidism or of general endocrin imbalance. The practical value of the measurement of the basal metabolism will be that the oto-laryngologist can use it to determine exactly which type of hyperaesthetic rhinitis he is dealing with, and control the administration of the thyroid extract by an exact objective laboratory test, rather than depend upon the less exact therapeutic result.

It is not the purpose here to describe the apparatus nor the technic of the measurement of the basal metabolism, neither is it possible or desirable within the limits of this paper to go into the physiology of basal metabolism. Suffice it to say that the tests were made with a Jones apparatus in the Cook County Hospital, and with a Jones apparatus by a commercial laboratory. Rather than present a long, confusing table of findings, I shall cite several typical cases, and leave the detailed analyses by tables for the final report upon this subject.

Mrs. C., aged 35, three children. Previous history: the usual diseases of childhood. Attacks of bronchitis over an indefinite period. Occasional gastro-intestinal disturbances. Attacks of tonsilitis. The tonsils were removed several years ago. Present complaint: Five years ago (1914-15) began to have fits of sneezing. These were at first mild. The attacks increased in severity, and were followed by a copious watery discharge from her nose. At such times she "choked up" (to use the patient's own words) and found it hard to breathe through the nose. Says she wheezed a great deal. She had a sensation of pressure on the chest. She said that not only was her nose blocked, but the trouble was also in her chest. The paroxysms came on once or twice daily, and at rare intervals she was free for several weeks at a time. The attacks were not worse in the fall of the year.

Examination. A woman well nourished, inclined to stoutness. She cried a great deal and appeared morose.

Inspection of the nose shows a slightly irregular septum, soft, boggy middle turbinates, and a pale, moist mucosa.

Pharynx. Shows a clean tonsillectomy. The pillars, post pharyngeal wall, larynx and trachea appear pale.

Laboratory. Urine, normal. Wasserman, negative. X-ray, sinuses clear.

Blood pressure. Systolic 100-110 on two observations. No record of diastolic pressure.

Physical examination. Refused the expense of consultation with internist. An examination, however, was made, and disclosed what seemed like a normal heart and lungs. Basal metabolism, minus 15.

Treatment. Three grains of thyroid extract three times a day. On the third day she was entirely free from the sneezing attacks, and there was no discharge. Patient feels fine. The same dosage was continued for ten days, when she complained of palpitation, nervousness and sweating. Basal metabolism measured and found plus 14.

Thyroid extract discontinued, and after two weeks symptoms again returned. Then small amounts of thyroid extract again administered and symptoms again disappeared. Now, after six months, patient has been entirely free from her symptoms.

Miss T. Referred by Dr. C. Phifer. An unmarried woman of 25. Previous history of no consequence. Present complaint: For the past six or eight months, upon arising in the morning, she has had a sneezing spell, followed by considerable discharge from the nose. Complains of difficult respiration at all times, worse at night.

Examination. Tall, slim young woman, apparently in good health.

Nose. Marked hypertrophy of the middle turbinates, which lie tightly against a straight septum. Practically normal inferior turbinates. Mucosa pink, with some dried mucous adhering to it on the septum and inferior turbinates.

Pharynx. Normal, except considerable scarring from tonsillectomy.

Blood pressure. 120 systolic, 88 diastolic.

Metabolic index within normal limits.

X-ray of sinuses negative.

Treatment. Advised middle turbinectomy, to which patient demurred. As second best advised the less radical procedure of sphenopalatine ganglion injection. Patient refused.

Prescribed thyroid extract in small doses with no result as to the sneezing and discharge. Patient still under observation.

Mrs. W. Referred by Dr. William Gamble. Married woman, aged 32; two children.

Previous history negative, except as to some gynecological operations.

Present complaint. Slight frontal headaches all the time. Has had attacks of sneezing often in the morning, but occurring also at other times during the day, and followed by discharge from the nose. This has gone on for several years. The attacks are seasonal in their course, being worst during the fall and spring months.

In the winter there are periods of several weeks when the attacks are infrequent and not of severe degree.

Examination shows a deviated septum, hypertrophied right middle turbinate. The mucous membrane is healthy and not pale. No post nasal discharge. Pharynx, larynx and trachea appear normal.

X-ray shows normal antra, ethmoids and frontal sinuses.

Basal metabolism within normal limits.

Treatment. Thyroid extract in small doses. Results: Apparent improvement in regard to sneezing and discharge, but patient says she doesn't sneeze so much in the winter months anyway.

After two weeks' treatment basal metabolism again measured and found plus 15.

It will be interesting to see what the metabolic index is in the spring and fall.

CONCLUSIONS.

Type C, of which one typical case was cited, shows a low metabolic rate. Thyroid extract effects, if not a cure, then a complete cessation of symptoms. Type B, in which the metabolic rate is normal, does not respond to thyroid therapy. Type A shows a normal metabolic rate, and is not influenced therapeutically by thyroid extract.

If hypothyroidism is the basis of a certain type of hyperaesthetic rhinitis, we must go further and determine the cause of the hypothyroidism, but that is a problem for the internist, with whom the oto-laryngologist must co-operate in order to establish the therapeutics of hyperaesthetic rhinitis upon a sound foundation.

A DIMINISHING PROFESSION.

The American Red Cross sees in the widening disparity between the increase of our population, and the decrease in the number of graduates from medical institutions, an added reason for promoting general training in first aid and accident prevention.

The present standard of pre-medical education has lengthened the time and increased the cost of medical training, thus curtailing to a large extent the yearly attendance at the medical colleges. In 1904, there were 28,142 students attending the various medical colleges of the United States, this being the largest number in any year during the period 1880-1919. The total number of medical students in the schools for the year ending June, 1919, excluding pre-medical, special and post-graduate students, was 13,052. There was a decrease in 1919 of 578 below that of 1918.

The high standard of efficiency established through the reclassification of medical colleges has caused the closing of many of the smaller and more poorly equipped ones. In 1906 there were 162 medical colleges in the United States; in 1919 there were only eighty-five recognized medical colleges. In 1903 there were 5,698 graduates from all medical colleges, one graduate for every 14,020 of population. This number has gradually declined, in spite of the increase in population, until, in 1919, there were only 2,656 graduates, a decrease of fourteen below that of 1918—one graduate for each 40,-230 people.

The longer hours and smaller remuneration of country practice have caused many physicians to move from the rural districts to the larger towns, where conditions are less difficult and remuneration greater. Many practitioners, desiring to specialize also, are attracted to the cities from the rural districts.

That the high standard of medical education must be maintained goes without saying, if we are to render efficient service to those suffering with disease. Nevertheless the shortage of practitioners has caused increased suffering in certain localities which is very severely felt. Those who reside in the sparsely settled areas are left to the care of untrained assistance and serious illness or loss of life often results. Numerous illnesses and injuries occur which, when improperly treated or if treatment is too long delayed, may prove fatal.

Universal first aid training would supplement the work of the physicians, take from them the burden of caring for unimportant injuries, would release their services for more serious cases, and would also place the victims of accidents in the physicians' hands in the best possible condition for future recovery.

This is the diphtheria season. Records of the U. S. Public Health Service show that 16 States reported over 5,000 cases in October and more in November. Don't worry about the "flu" this winter; it is unlikely to return. Worry about diphtheria; worry enough, anyway, to have your doctor determine by a simple test whether you and your children are immune. If they are not, protect them by the new method of immunization.

Little coughs often lead to large coffins.

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EDITORIALS

A PLEA.

By Edgar A. Guest.

God grant me this: the right to come at night
Back to my loved ones, head erect and true;
Beaten and bruised and from a losing fight,
Let me be proud in what I've tried to do.

Let me come home defeated if I must,
But clean of hands, and honor unimpaired,
Still holding firmly to my children's trust,
Still worthy of the faith which they have shared.

God grant me this: whate'er the fates decree,
Or do I win or lose life's little game,
I still would keep my children proud of me,
Nor once regret that they must bear my name.

PHYSICIAN'S STRONG BOXES.

WE physicians are generally credited with being the champion bad business men of the world. We see that fact stated frequently in the literature of the day and the comic magazines particularly like to play around with the idea. It's had such common coinage that even many of us have come to believe it and if we get into an unfortunate deal or any of our associates "take a flier" that crashes to earth, we resignedly dismiss the matter with the thought, "Oh well, no physician is supposed to know anything about business anyway."

Unfortunately, the misfortunes which we take so philosophically, represent as a rule, many good hard earned dollars that would do us, or, what is more important, our families a lot of good.

Two things can be said to justify our failing—first, unlike the business man we haven't an outlet in our own business for our surplus capital; second, our income doesn't come in regular doses. It has a tendency to be homeopathic one month, and allopathic the next.

Consequently during flush times we may be pretty easy marks for the get rich quick promotor who comes along and paints a rose bed future with nothing to do but cash the 48% dividend checks.

We've known of course, from hearing our banker friends talk about it that there are entirely conservative ways in which to invest money that will return one a better rate of interest than the savings bank or certificate of deposit will furnish, yet which has all the safeguards and protections that surround a strong bank. The bonds of a high grade industrial concern or public utility usually have as great a margin of safety as a bank deposit, and pay a more liberal rate of interest. But securities of this type until recently meant the paying down in cash of $500.00 or $1,000.00 or more. And we didn't have it all in one bunch.

Certain far sighted investment bankers who appreciated the value of a large number of small investors as above that of a small number of large investors, invented the partial payment plan to

make it possible for all income producers to become owners of high grade securities.

Many physicians have recognized the advantages of this plan. It requires no large outlay of money. A man may buy a hundred dollar bond, or a five hundred dollar bond or any amount he wants and pay for it over a year's time, drawing interest on his money while he is doing it. The individual payments are small enough not to bother him and are made at his convenience. When he has his bond paid for he can tuck it away in his strong box with the knowledge that it will go right on working for him year after year and return him dollar for dollar of his original investment when the bond falls due.

ENCEPHALITIS LETHARGICA.

FOR over two years there have been cases of illness characterized by the most bizarre clinical picture but practically invariably, in the severe cases, accompanied by prolonged lethargy or even coma. These cases have been reported from all over the civilized world. The first reports apparently came from Italy and Austria. In England, it was made the object of extensive investigation by the Local Government Board. In this country, there have been reports in the literature from widely separated places.

Is it a new disease? Some think it is, yet it is difficult to understand how a perfectly new disease can suddenly develop in such widely scattered countries. Some have thought that there was a connection between the great pandemic of influenza which lately swept over the world and this disease. It is more than probable, however, in the light of recent research, that there is no connection between the two. Influenza may have determined a general lowered resistance to all kinds of infection but nothing more.

It is also more than probable that many of the cases which were called "brain fever" by the older physicians were instances of encephalitis lethargica, or, as it is popularly known, sleeping sickness.

One symptom which has been rather frequently seen has been a curious clonic, more or less regular, contraction of groups of muscles. At times, the muscles supplied by one nerve, for example, the facial, may show these clonic spasms; again the leg, arm or abdominal muscles have been affected. When the abdominal muscles alone have been spasmodically contracting, hiccough results. This has been a most distressing symptom. The suggestion has recently been made that some of the cases of hiccough which have been noted widely in the public press are mild cases of encephalitis lethargica. In view of the well-recognized fact that in an epidemic all forms of a disease, from the mildest to the most severe, are seen, the suggestion is not as far fetched as it may seem. This at least serves to establish the connecting link between the mild and severe forms and helps to explain the remarkable scattering of the cases.

The disease acts in some ways like poliomyelitis in that the cases are found here and there and one member of a family may be attacked while the rest escape infection. The pathological lesions, too, are much like those found in poliomyelitis except that they occur in the brain and basal ganglia instead of in the spinal cord.

The unusually bizarre character of the symptoms is readily understood when it is recalled that the whole brain is the center of all nervous control. The symptoms depend upon what particular part of the brain is most affected.

The disease may begin with diplopia, with violent headaches, with pains in the joints, with disturbances in the psychic realm, with sudden paralysis of one or more groups of muscles, even a complete hemiplegia, etc. There is fever, slight or up to 103° F. There is usually mild leucocytosis and the spinal fluid often reveals a slight increase in the cell count, although there are well recognized cases in which the spinal fluid is normal in all particulars. Sooner or later in the moderately severe or severe cases there is a curious lethargy or coma with a mask-like expression of the facies with occasionally suffusion of the conjunctivae somewhat resembling the appearance of the eyes in epidemic influenza. The mortality varies greatly. When all the cases reported are considered, the death rate is about thirty percent.

The actual cause of the disease is not definitely known although there is considerable evidence now that it is due to a filterable globoid organism. The virus is more toxic to rabbits than it is to monkeys, exactly opposite to the virus of poliomyelitis, which the encephalitis lethargica virus resembles greatly.

The disease is rather widespread in this State.

The writer has seen a number of cases in Milwaukee and in several towns in the State and knows of other cases seen by different physicians throughout the State. In typical cases the diagnosis is not difficult. The chief diseases from which it must be differentiated are brain tumor, including syphilitic gumma, tuberculosis meningitis, and serous meningitis from alcohol. Coma due to sudden brain accidents, to diabetes and to uremia is not difficult to differentiate provided one bears these conditions in mind and does not fail to make simple examinations.

Physicians all over the State should be on the lookout for these cases as they are sure to be found in every locality sooner or later. L. M. W.

"DANNY" HOPKINSON.

DR. DANIEL HOPKINSON, Milwaukee pathologist and Secretary of the Medical Society of Milwaukee County, and Mrs. Hopkinson were guests of honor at a testimonial banquet given at the Athletic Club, Milwaukee, the evening of February 24th by the medical profession of Milwaukee and the State.

More than two hundred physicians attended. Eulogies were showered on Dr. Hopkinson and his wife, who has been his constant attendant through many years of physical disability. Among the speakers were District Attorney W. C. Zabel, Judge A. C. Backus, Dr. Wm. A. Evans, Chicago, Drs. F. C. Studley and Horace M. Brown.

It was a wonderful evening and a wonderful tribute to a wonderful man and woman. No Wisconsin physician has won a higher place in medicine and no one as big a place in the heart of his local profession. He has the confidence of the medical and legal professions as few men ever have.

Against a physical handicap almost overwhelming, with the help of Mrs. Hopkinson he has made of himself an authority in pathology and medico-legal practice and, in addition, as the untiring secretary of the largest county medical society in the State has for years given unselfishly of his life for the betterment of his profession.

The tribute was well earned and deserved, for to know "Danny" Hopkinson is to admire and love the very best that is in our profession.

PUBLICITY.

ASIDE from their frank and open-faced paid advertising campaign, the chiropractors are apparently conducting a subtle "news" propaganda in the interest of this "new science" through the Wisconsin press. Thus we are informed that the Waukegan child who talked too much and inspired so much talk upon the part of newspaper readers was finally stopped by an adjustment of certain spinal vertebrae. And from Waukesha comes news that a child, mute for four years, now talks after treatment of a dislocation of the fifth cervical vertebra. Read only two clippings. These appeared in every paper in the State.

"WHAT A CHIROPRACTOR DID."

"Perhaps you read about the matter. The little Waukegan child that talked for eight days without a let-up? Physicians came and shook their heads. The medical profession had met one of those strange cases that could not be fathomed. It was too deep. They were helpless, and, gentlemen that they were, acknowledged it.

Along came a chiropractor. They let him try. The frantic parents were seeking to restore their child to normal, not out criticising the different methods of health repairing. The chiropractor made his adjustments and the child was made to sleep, the first sleep she had in eight days. Marvelous? Yes; and yet how commonplace. Simply, the right treatment had been found.

But it teaches us this: That medicine is not the all-power factor in restoring health or preventing disease in which manner it has been brought up from the ages with our parents, their parents, and so on. Medicine is not to be condemned, but many of those who take it and many of those who administer it, are to be blamed for the false conception allowed to be placed upon it as a remedy for everything including some forms of insanity."—The Manitowoc Times.

"BABY, VOICELESS FOR 4 YEARS, TALKS."

"Without voice for four years, a baby's cry of 'mamma' yesterday thrilled the parents of Florence Craft, 4-year-old daughter of Ralph P. Craft of Buena Vista, town of Delafield, when the child responded to the chiropractic treatment of W. W. Fullrath of Waukesha.

Other physicians had been baffled by the case.

Since the child was four months old she attempted speech only in whispers. The chiropractor explained that the fifth cervical vertebra had become paralyzed due to a cold. He adjusted the vertebra from right to left. The parents were overcome with joy as they stood in the practitioner's office taking turns holding the child.

The case is a direct opposite of the Rueben baby of Waukegan who talked incessantly and was stilled through similar treatment."—The Wisconsin News.

Observe, gentle reader, chiropractic makes 'em talk and it makes 'em stop. As "Tonic and Sedatives" (Journal A. M. A.) remarks, "The married man's hopes from chiropractic are blasted again."

But, seriously, is chiropractic to be the means of educating the public in medical matters and in the control, prevention and cure of disease? The Milwaukee County Medical Society has condemned honest health columns in the press. Is the press to be turned over to the chiropractors and the naprapaths?

The chiropractors may be, as they are often said by competing physicians to be, ignorant men and women. But it is doubtful if they are so lacking in a sense of humor that *they* can not see the ridiculous way in which we are turning over the public prints (our greatest present day instrument for the manufacture of public opinion) to their exclusive service.

Where, Oh Where, has our sense of humor gone? Or, did we never have one?

THE JOURNAL CLINIC

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CLINIC OF LOUIS M. WARFIELD, M. D., MILWAUKEE COUNTY HOSPITAL.

The following case is interesting in view of the age of the patient, the course and the apparent result in quiescence in spite of symptoms and signs which pointed to a fatal outcome.

W. C., a white laborer, single, age 51, was admitted to the Milwaukee County Hospital on July 22, 1914. He complained at this time of constant pain in the pit of the stomach, and nausea which had been present for about six months. He was in the hospital in 1911, with a sprained neck, the result of a fall. At that time he had no stomach complaint. The general physical examination was negative. His past history revealed one attack of acute polyarthritis at the age of 35 years. He was a rather heavy drinker, a hard worker. He had had several attacks of gonorrhea, but denied syphilis. Although for the past few years he had had occasional stomach distress, he did not pay much attention to it. About three years before he had had a severe attack of nausea, vomiting, retching and pain in the stomach which lasted about four months. (This was subsequent to his admission in 1911.)

His present illness followed a prolonged period of heavy drinking about the latter part of December, 1913. He was suddenly seized with violent pain in the stomach. There were nausea and vomiting. There was loss of appetite. Alcoholic drinks did not relieve the pain. For about two hours after eating, the pain would leave, but would then return. It was worse at night. Recently eating did not relieve the pain, which became so severe that he had to go to bed.

On physical examination, the lungs and heart seemed normal. The pupillary reflexes were present and the deep reflexes were active. The abdomen was soft, the panniculus well preserved. Beneath the left costal border I thought I could feel a tender mass which contracted and relaxed while the hand was on the abdomen. There was tenseness of the right upper rectus, but no mass was felt.

An Ewald test meal was given. After one hour 175 c.c. of contents were removed. The material was faintly greenish, cloudy, and contained some mucus. Total acidity 47, no free HCl. Lactic acid positive. Blood negative. No Oppler-Boas bacilli found. Stool examination did not reveal any occult blood. The stool was yellow (milk diet) and well formed. The urine was negative.

He was discharged August 18, 1914, feeling greatly improved. The diagnosis was probable carcinoma of the stomach. He refused exploratory operation.

He was readmitted December 20, 1915, complaining of pain in the stomach 1-2 hours after meals, but relieved somewhat by food. He had frequent "heartburn." He had lost twenty

pounds in the past four weeks. He was still drinking heavily and had occasional attacks of vomiting with nausea. He was also constipated. This time he said that he had been vomiting after meals and the vomitus was often dark brown; he thought it was blood.

On examination of the abdomen there was tenderness in the right epigastrium, with slight muscle tenseness. Beneath upper left rectus there was felt a mass which moved on respiration and over which the percussion note was a trifle higher pitched than over the rest of the abdomen.

The blood count showed a slight secondary anemia. The Wassermann reaction was negative. Two Ewald test breakfasts on December 22, 1915, and January 19, 1916, revealed the following:

1st.	Total acidity	5	2d.	17
	Free HCl	4		13
	Blood	none		none
	Starch	present		present
	Fat	present		none
	Lactic acid	none		none
	Oppler-Boas bacilli	none		none

Several stools were examined for occult blood. None was found.

Note of December 23, 1915: Head of barium column given last night (ten hours) is in rectum. No residue in stomach. Contrast meal at 9:30 a. m. passes directly into stomach. Stomach slightly low, modified fish-hook shaped, peristaltic waves quite strong and active, once revealing four separate fragments. No irregularities or other abnormalities made out. (No plates could be made with our machine.)

At 11 a. m. The stomach was emptying rapidly. Barium filled the whole colon. He had eaten dinner, so no further observations could be made out. Again, on January 31st, a barium meal was given, but we could not make out any abnormalities. On January 6th he complained of generalized pain of a dull character over the abdomen. On examination, there was tenderness over the right half with marked tenderness and some rigidity over McBurney's point. The leucocytes were 7,000. He was discharged March 18, 1916, at his own request. He had become quarrelsome and unmanageable. He did not wish any surgery done. The diagnosis was chronic appendicitis.

He was re-admitted July 17, 1916, and discharged August 4, 1916. He came in with a Herpes Zoster and an infected finger. He had no stomach complaint. He was readmitted July 24, 1917. On March 1st he had had a hemorrhage from the stomach and bowels which lasted for three days. He was operated upon at Cook County Hospital, Chicago, and after operation was placed on ulcer diet. He gradually improved, left the hospital the latter part of May, and kept up a partial diet for about six weeks. On July 19th, after a heavy meal, he had a severe attack of pain in the stomach followed by vomiting. He entered Emergency Hospital and was later transferred to the Milwaukee County Hospital. Under the fluoroscope there was a ten-hour retention in the stomach with hyperperistalsis and a ragged appearing mass in region of the pylorus. On the abdomen was a scar in the epigastrium and a small one over the appendix area. The liver was felt. No mass was felt in the epigastrium. He experienced great relief from stomach lavage daily. While on a diet he ate other food and frequently had violent attacks of pain. Once he vomited coffee grounds material and about a gallon of brownish fluid was removed from the stomach by the tube. In this fluid were particles of food eaten the day before.

He was a most disagreeable patient. He disobeyed orders, quarreled with the nurses, refused further operation, and left August 30, 1917. The diagnosis was Duodenal Ulcer.

He was out only four days. When he returned to the hospital September 4th, 1917, he complained of vomiting large quantities of yellow fluid and of passing dark stools. The stomach was found to be dilated. By the stomach tube about 3100 c.c. of acid, milky fluid were removed. He remained until October 29, 1917. On a milk and cream diet with some starchy foods he gained 35 pounds in weight. Off and on his stomach was washed out. This procedure always recovered large amounts of contents, often a day old. Towards the latter part of his stay he felt well and no lavage was necessary.

His last admission with us was on January 14, 1918. He entered the hospital because of increasing pain for a week previous, and because of a hemorrhage from the stomach. He noticed dark, tarry stools also. There was an area over the seat of the pylorus which was very tender on palpation. On January 15 and 16 he had hematemesis and bloody stools. His hemoglobin was reduced to 50 per cent, the red cells to 3,800,000. He suffered for several nights with violent pain, and

belching of large quantities of gas. Stomach lavage removed from 300 to 500 c.c. of acid contents. He then washed his own stomach out at night for about a week. Often there were coffee-ground contents in large quantity. Active peristalsis of the stomach could be seen during this period. He refused any surgical intervention. He gradually lost his pain, his stomach again seemed to pass on food without causing him distress, and he left of his own will on May 19, 1918. It was thought that his ulcer had produced stricture at the pylorus and was possibly undergoing carcinomatous changes.

He was lost track of until accidentally, on December 1, 1919, he was seen in Chicago. He stated that he had been perfectly well since he had left the hospital in May, 1918, and that he had been working daily. His general appearance was ruddy, his flesh seemed firm, and no one would have said he was not the picture of health.

DISCUSSION.

Analysis of this case is most instructive. In the first place, it reveals in a small way the development of our own diagnostic ability with the fluoroscope. We had then an old coil and a fluctuating current which made it difficult to obtain such penetration as would enable us to see even fairly distinctly. We did note, in 1915, that at one time there were four separate waves of peristalsis in the stomach at one time, hyperperistalsis. There was no ten-hour residue then and a few days later no abnormalities were seen, due, possibly, to our poor illumination. Very likely there was no six-hour residue. There may have been a defect in the cap.

Again, the history dated back to 1911, when he had had some stomach distress lasting for several months. It was not, however, until after violently abusing his stomach with alcohol that his first real serious symptoms were noted. The pain, the vomiting, the loss of weight, the age of the man, the low gastric acidity on several examinations pointed to a cancer of the stomach. No occult blood was found in the stools, but that is not unusual in cancer of the stomach. In fact, recent work tends to discredit the value of occult blood in the stools. Then his later admission with hyperchlorhydria and hypersecretion and pain over the appendix led us to believe that the vomiting and nausea and pain might be reflex, especially as we could find no definite signs of ulcer or cancer. His pain at night, hours after food, was suggestive of duodenal ulcer, but other data suggested other possibilities. On several admissions a tentative diagnosis of duodenal or gastric ulcer was made, but the data never seemed sufficient for a final diagnosis of either condition.

Then his first hemorrhage occurred while he was in Chicago, six years after his earliest symptoms. That, of course, settled the diagnosis of ulcer. Then began a most remarkable series of attacks of agonizing pain with visible stomach peristalsis, belching and great dilatation of the stomach with retention of food for at least 24 hours. It was astounding how much the empty stomach also secreted, often 300 c.c. of acid fluid. Violent hemorrhages occurred off and on. Yet he recovered symptomatically so that for over 18 months he was apparently cured. What happened to the ulcer? It is not conceivable that it healed, for there must have been much induration around it. His pylorus narrowing must have been purely irritative, yet there was every sign of organic stricture. He was free from symptoms, but probably not cured of his ulcer. It has been shown that patients may be relieved of ulcer symptoms and yet the signs of ulcer are just as evident as they were at the height of the symptoms. Will he develop carcinoma? That is difficult to prognosticate. If his ulcer is in the duodenum, which the evidence seems to show it is, then his liability to cancer is slight, for it is seldom that cancer develops on a duodenal ulcer. Statistics show that of cancers of the whole intestinal tract only about 2 per cent are in the duodenum.

We learned much from this case. It is unfortunate that we have had no word for over a year. We hope that we shall be able to complete the story some time.

CLINIC OF J. M. DODD, M. D.,
ASHLAND, WIS.

The 1920 hunting season brought to our Clinic the following list of rather unusual gunshot injuries:

P. G., a young man, while deer hunting, was shot by some person unknown, who had evidently mistaken him for a deer. The bullet carried away the metacarpo-phalangeal joints of the third, fourth and fifth fingers of the left hand, broke and carried away the trigger guard and trigger of the gun he was carrying, and entered the left hip just below the level of the great trochanter, taking a

course backward and across the body. The external wound was one-half by one inch in size and no wound of exit. X-ray showed no large missile in wound, but many small fragments along the course of the wound, which was about four inches deep. This wound was cleared of debris and drained. The wound of the hand had been closed by the doctor who had given first aid, but he had not sutured the tendons. The wound was reopened, tendons sutured, the wound closed again and dressed in the usual way. Uneventful recovery followed with a prospect of good function in the hand.

An interesting feature of this case is the rather large wound caused by the comparatively small fragments of lead remaining from the shattered bullet.

Case 2. E. B., a school girl, age 16, was shot through the body by her brother, who was cleaning a 22-calibre rifle near her, as she sat at work in the kitchen. The bullet struck her in the left side, at about the junction of the waist and mid-lateral lines, passing forward and upward, and was later found beneath the skin in the mid-epigastric region.

She was brought immediately to the hospital and laparotomy performed. A considerable amount of blood and clots was free in the abdomen and there were signs of progressive bleeding. The stomach was perforated through both walls at the cardiac end. There was very little leakage though the stomach was full of food. The left lobe of the liver was perforated and this was the source of the hemorrhage. No other injury to the abdominal viscera was found. The opening in the anterior wall of the stomach was enlarged and the stomach emptied through it. The opening was then closed, the wound of exit was also closed, and the punctured walls of the liver were sutured on both the posterior and anterior surfaces. Drainage was introduced into the pelvis through a suprapubic opening.

The case progressed satisfactorily for the first week, then it was found that a large abscess had developed in the wound which, on being opened, discharged its contents and continued to do so for some time—it had been confined to the abdominal wall. Finally the wound healed. During her convalescence there were no intra-abdominal symptoms of importance.

Case 3. M. L., while hunting in the woods, and walking on a log, his gun slipped, striking the hammer, causing it to be discharged. The charge of shot entered Scarpa's triangle on the right side, ranging outward and upward. There was a large lacerated open wound one and one-half inches wide and four inches long, extending along the lower border of Poupart's ligament. A part of the shot and wadding from the gun were lodged beneath the skin below the anterior superior spinous process of the ilium of the right side. From the middle of this wound there was a large ragged wound extending upward under Poupart's ligament into the iliac muscles. At the bottom of this wound was his watch, badly battered, which he had carried in his pocket, and had been forced by the charge from the gun into the place where it was found. There was a rent in the posterior peritoneum through which a finger of omentum was protruding. The wound was carefully debrided and an opening made over the appendix to see what damage had been done, if any, in the peritoneal cavity. The appendix was found to be edematous from the trauma and was removed. The finger of omentum protruding through the opening of the peritoneum was removed and peritoneal wall sutured from within the abdomen. The abdominal wall was then closed. The femoral vessels had not been touched by the charge and the anterior crural nerve lay bare and exposed across the wound. No suturing of the wound was attempted, but it was packed with gauze which was kept saturated with Dakin solution. There was another wound through the right forearm through which a part of the charge had passed.

This case progressed through convalescence to recovery without any untoward symptoms except a slight secondary hemorrhage from the arm wound. Period in hospital, seven weeks.

Case 4. Case four was injured in somewhat similar manner to that of case three. L. S., age 39, while standing on a log with his hand over the muzzle of his gun, the latter slipped, struck the hammer and was discharged. He was immediately brought to the hospital. The charge passed through the left hand, carrying away the greater part of the metacarpals of the third, fourth and fifth fingers. It was necessary to amputate the middle finger. The fourth and fifth were shortened up in such a manner as to close the wound, leaving these fingers much shortened but with the possibility of becoming useful in case there was

some restoration of the metacarpals. The periosteal tissue was not injured beyond the under surface of the bone, and some fragments of bone with periosteum attached were left in the wound.

The wound was closed as well as possible and dressed. He remained in the hospital four days and then went home to have attention of his own physician. I have not heard the outcome of the case, and while the fate of the ring and little fingers was uncertain the effort to save them seemed proper since amputation could be done later if it became evident that the fingers could not be made useful.

POSTGRADUATE MEDICAL COURSES.

Last summer there was a series of ward classes held at the Milwaukee County Hospital, Wauwatosa, just outside of Milwaukee, in which a number of physicians from the state participated. The success of these classes has led some of the members of the staff to plan a series of courses according to the schedule here appended.

Every course will last two weeks. Anyone wishing to take four weeks can do so. The courses will begin Monday, July 11th. It is planned to give three this year, viz.: July 11-July 23; July 25-August 6; August 6-August 20.

Those desiring to enroll may communicate with the Superintendent, Milwaukee County Hospital, Wauwatosa, Wis.

The men who are giving the clinics and lectures prefer to have not more than ten men in any one course. The instruction is individual, with bedside clinics, and it will be better for all if the class is small.

There is no fee attached to the course. The schedule follows:

MONDAY.

9-11 a. m.—Medical Ward Rounds, Dr. Warfield.
11-12—Pediatrics Rounds, Dr. A. B. Schwartz.
12-1—Luncheon.
1-2 p. m.—Clinical Miscroscopy, Blood Chemistry, Dr. Margot.
2-5 p.m.—Ward examinations.

TUESDAY.

9-11 a.m.—Surgical Operative Clinic, Dr. J. L. Yates.
11-12—Medical Clinic, Dr. Warfield.
1-3 p. m.—Ward examinations.
4-5 p.m.—Gynecology Lecture (Med. Library Lecture Room), Dr. Davis.

WEDNESDAY,

8:30-11 a. m.—Gynecology and Obstetrics Clinic, Dr. C. H. Davis.
11-12—Dermatology, Dr. Harry Foerster.
1-2 p. m.—Serology, etc., Dr. Margot.
2-5 p. m.—Ward examinations.

THURSDAY.

9-11 a. m.—Medical Ward Rounds, Dr. Warfield.
11-12—Clinical-Pathological Conference, Dr. Warfield.
12-1—Luncheon.
1-3 p. m.—Ward examinations.
4-5 p. m.—Pediatric Lecture and Clinic (Children's Free Hospital), Dr. Schwartz.

FRIDAY.

9-11 a. m.—Surgical Operative Clinic, Dr. J. L. Yates.
11-12—Pediatrics Rounds, Dr. Schwartz.
1-2 p. m.—Clinical Microscopy, Dr. Margot.
4-5 p. m.—Gynecology Lecture (Med. Library Lecture Room), Dr. Davis.

SATURDAY.

9-11 a. m.—Orthopedic Clinic, Dr. F. J. Gaenslen.
11-12—Pediatrics (Home for Dependent Children), Dr. Dirk Bruins.

SYMPTOMATOLOGY OF SPINAL CORD TUMORS.

Isador Abrahamson and Hyman Climenko, New York (*Journal A. M. A.*, Oct. 23, 1920) caution that progressive spinal cord diseases giving level signs and symptoms should be carefully observed and studied. When no distinct level can be established, the effect of lumbar puncture should be carefully watched. Xanthochromia of the spinal fluid in level spinal cord progressive affections usually means spinal cord tumors. One should operate only when a level has been established. Probing above and below the suspected site, while useful in many cases, often fails. Operations, frequently by their decompressive effects, help even in intramedullary tumors. The possibility of a soft tumor in atypical level cord lesions must be borne in mind, as these are most frequently overlooked. From their study of spinal cord tumors, the authors deduce the following signs as a guide for the establishment of the actual site of the tumor: 1. *Valuable Signs.*—(*a*) Root signs; which consist of neuralgic pains with symptoms pointing to a distal distribution of an affected nerve. (*b*) Zones of hyperesthesia immediately above the seat of the tumor and more marked at the homolateral site. (*c*) Level abolition of skin and tendon reflexes. (*d*) Deep spinal tenderness. (*e*) Alteration in vibratory sense. (*f*) No sweating below the level after injection. (*g*) Ocular symptoms, such as lateral nystagmus and difference in the pupillary size as well as the palpebral fissure, which may all be present in high cervical tumors. 2. *Less Reliable.*—(*a*) Homolateral paralysis. (*b*) Heterolateral distribution of pain and temperature sense, which reach their highest level only after considerable cord compression, late in the disease. (*c*) This sensory loss, when complete, is usually three segments below the actual level of the tumor.

DIAGNOSIS OF DISEASE OF GALLBLADDER.

The more characteristic biliary tract syndromes are summarized by Lewellys F. Barker, Baltimore (*Journal A. M. A.*, Oct. 23, 1920) as follows:

Acute Cholecystitis (Mild)—Mild "indigestion"; slight pain and tenderness in the right hypochondrium; sometimes, a palpable gallbladder; slight fever and slight polymorphonuclear leukocytosis; symptoms often subsiding in a few days on rest in bed, light diet and local thermotherapy.

Acute Cholecystitis (Severe)—Symptoms more severe than in the preceding; nausea and vomiting common; gallbladder distended and very painful on palpation as a rule; upper right rectus rigid; leukocytosis of from 12,000 to 20,000; fever; sometimes chills, especially if exudate is seropurulent; signs of peritoneal irrigation; need of immediate operation. If the patient is very toxic, the gallbladder may be gangrenous. The condition may be mistaken for acute appendicitis or for acute peritonitis due to perforation of a gastric or a duodenal ulcer.

Chronic Cholecystitis, With or Without Gallstones—Attacks of "indigestion" or "biliousness" ("gallbladder dyspepsia," "inaugural symptoms") with fulness, weight and distention after meals, relieved by belching, but often followed by soreness and stiffness in the right hypochondrium lasting a few days. Sometimes there are characteristic attacks of biliary colic, most often nocturnal, with severe pain in the epigastrium and in the right hypochondrium, radiating to the back and often to the right shoulder, accompanied by gaseous distention and often by vomiting; and not infrequently requiring morphin for relief. The gallbladder may or may not be palpable (it is often shrunken). Tenderness on pressure in the gallbladder area is usually present. Roentgenograms may, or may not, show the presence of gallstones; they may reveal displacement of the pylorus upward and to the right, and distortion of the duodenal cap or of the pyloric end of the stomach, especially if there is a complicating adhesive pericholecystitis. Impairment of the general health is common.

Acute Infectious Choledochitis—After an attack of biliary colic, jaundice develops with enlargement of the liver, tenderness in the midepigastrium and to the right of this, with fever and leukocytosis. If a stone is passed, the infection may subside quickly. Colic may or may not occur. Recurring pyrexia with chills and sweats (intermittent fever of hepatic origin) points to purulent cholangitis. There is persistent jaundice with bilirubinuria. The gallbladder is rarely palpable because usually small and shrunken from coexistent chronic cholecystitis. Operation is indicated.

Chronic Catarrhal Cholangitis (Calculous or Noncalculous—Chronic intermittent jaundice; sometimes, attacks of biliary colic; fever may be absent or temporarily present; slight leukocytosis in exacerbations; may be confused with (1) carcinoma compressing the ductus choledochus or (2) hypertrophic biliary cirrhosis.

Biliary Obstruction with Distention of Gallbladder Due to Chronic Pancreatitis or to Carcinoma of the Head of the Pancreas—Maximal jaundice (after gradual onset and steady increase without recession) with complete intestinal acholia, bilirubinuria and pruritus; usually entire absence of pain and fever; large, easily palpable gallbladder. Sometimes, a tumor is palpable in the epigastrium. Tendency to emaciation and cachexia greater in carcinoma than in pancreatitis. Glycosuria present in 25 per cent of the cases. Operation indicated, and often too long delayed in the hope that only catarrhal jaundice exists.

Hydrocholecystosis or Chronic Remittent Cholecystosis (With or Without Stones in the Gallbladder)—Brief attacks of pain without fever, recurring for months or years in the right hypochondrium, synchronous with recurring distention of the gallbladder, but without signs of local or general infection (Berg). A Riedel's lobe may be palpable, and, if so, may be mistaken for a mobile kidney, a hydronephrosis or a neoplasm.

Carcinoma of the Gallbladder—Nodular mass palpable in gallbladder region, appearing in a patient who has earlier shown signs of cholecystitis or of gallstones; jaundice in 75 per cent of the cases; ascites in 25 per cent; metastases in the liver may occur early; cachexia is common. Operation, unless performed very early, rarely saves the patient. Death usually occurs within a few months.

FIRST HEART SOUND AND PRESYSTOLIC MURMUR.

Apparently discordant facts concerning the first heart sound and the presytolic murmur are presented by William D. Reid, Boston (*Journal A. M. A.*, Feb. 12, 1921). To term the murmur that is noted in some large hearts without structural change in the mitral valve early systolic rather than presystolic he states is more consistent, in consideration of its intensity and pitch, with a murmur produced by a pressure such as obtains with ventricular systole. It is safer to designate as "presystolic" only such murmurs as are definitely late diastolic in time. The early systolic murmur (sometimes wrongly termed presystolic) occurs in large hearts, and it is suggested that it is produced by an insufficiency of the mitral orifice due to a delay or failure of the muscular contraction in approximating the margins of the opening. The crescendo tone sometimes characterizing the first heart sound may be merely an exaggeration of the normal. Owing to the physiologic tendency of the heart to dilate somewhat as the primary effect of exercise or excitement, it is suggested that a murmur occurring in early systole may sometimes be obtained in the normal heart after exercise or excitement.

SECONDARY PULMONARY HYPERTROPHIC OSTEOARTHROPATHY.

The patient whose case is described by Samuel Kleinberg, New York (*Journal A. M. A.*, Feb. 12, 1921), developed pathologic changes in the extremities as a result of a chronic fibrous pulmonary tuberculosis. He had swelling of the distal extremities of all the limbs, most marked in the legs and feet. The swelling was due to three conditions: (*a*) hyperemia, (*b*) fibrous tissue thickening of the subcutaneous tissue, and (*c*) ossifying periostitis of the long bones. He had (*a*) permanent globular enlargement or clubbing of the distal

phalanges of the fingers and toes; (*b*) parrot-beak deformity of the nails of the toes and fingers; (*c*) subperiosteal deposit of bone along the shafts of the long bones of the extremities, and (*d*) thickening of the tip of the nose and to a less marked degree of the malar regions. Kleinberg is of the opinion that many of these cases are overlooked because of lack of acquaintance with the definite group of symptoms and pathologic changes. In institutions in which lung lesions, such as bronchiectasis, chronic pleuritis, tuberculosis and abscesses of the lung, are numerous, this disease is seen frequently enough as a complication. In the average private and hospital practice, on the other hand, hypertrophic osteo-arthropathy is very uncommon. Yet so characteristic are the evidences of this disease that, once a case is seen, the condition will always be readily recognized.

ADMINISTRATION OF CARBON DIOXID AFTER ANESTHESIA AND OPERATION.

This review by Stanley P. Reimann, George H. Bloom and Hobart A. Reimann, Philadelphia (*Journal A. M. A.*, Feb. 12, 1921), concerns the administration of carbon dioxid after anesthesia. In view of the experiments and results reported, and the consideration of its therapeutic and theoretical bases contrasted with the administration of an alkali, the use of sodium bicarbonate in a practical way is indicated. Sodium bicarbonate should be given to selected surgical patients. The use of carbon dioxid by inhalation is contraindicated.

ETIOLOGY OF COMMON WARTS.

The demonstration of a filtrable virus for warts by Wile and Kingery is further substantiated by their production in the second generation as reported by Lyle B. Kingery, Ann Arbor, Mich. (*Journal A. M. A.*, Feb. 12, 1921). The period of incubation from the time of inoculation to the development of well defined lesions was six months, which is apparently much longer than pertains to other nonfiltrable viruses. The histologic picture corresponded without exception to the present conception of ordinary warts.

TUMORS OF OVARY IN CHILDREN.

William A. Downes, New York (*Journal A. M. A.*, Feb. 12, 1921), reports a case of large ovarian cyst in an infant, 7 months of age. It contained 2.5 liters of fluid. There was no evidence of malignancy. The patient recovered from the operation.

EPITHELIOMA OF LOWER LIP.

As noted by others, the reports analyzed by Everett S. Lain, Oklahoma City (*Journal A. M. A.*, Oct. 16, 1920), obtained from a study of 122 cases also show epithelioma of the lower lip to be far more common in outdoor workers, and most frequently seen on the side of the mouth where a cigar or pipe is held. Early diagnosis and treatment of the lymph drainage of the lips will materially raise the percentage of cures. Neither surgery, radiotherapy nor any other one successful method of treatment should be used in all cases alike. Radium and the roentgen ray, singly or combined, give the most satisfactory results in a selected class of epithelioma of the lower lip. Lain places these cases in three groups: 1. Epitheliomas which may begin as a seborrheic-like crust, a small recurrent vesicle or fissure, at first superficial, later becoming infiltrated and indurated, etc., and situated entirely or almost entirely on the cutaneous surface of the lower lip. These lesions are generally of slow growth and late to metastasize. 2. Those which are so located that one third or more of the lesion overlaps the mucocutaneous border of the lip, though no glandular enlargement is easily palpated. 3. All cases in which more than half of the malignant growth is situated on the mucous surface of the lip of many weeks' or months' duration, and cases which owing to neglect or incomplete treatment, have had a marked recurrence. Treatment with the roentgen ray or radium, singly or combined, was given to 107 patients. Of seventy-two patients treated and belonging in Class 1, 95.8 per cent are living today or have lived for more than three years. Of twenty-seven patients belonging in Class 2, 70.3 per cent lived from one to nine years. In Class 3, nineteen patients were examined, of whom four were treated. Three of these died within one year.

INFLUENZA AND HYPOPHRENIA.

Cases are cited by Karl A. Menninger, Topeka, Kan. (*Journal A. M. A.*, Oct. 16, 1920), to illustrate the interrelation of influenza and feeblemindedness. They are placed in six groups: (1) hypognosis; (2) dysthymia; (3) parabulia; (4) hypophrenia with neurologic manifestations prominent; (5) hypophernia with psychic manifestations prominent, and (6) hypophrenia with psychopatic manifestations prominent. A most remarkable case of amelioration by influenza is also cited. This was the symtomatic improvement of a severe grade of feeblemindedness immediately following an attack of influenza. On the whole, this study aims to demonstrate the pragmatic principle of studying effects. Menninger claims that this small series of cases represents perhaps the largest collection of cases dealing with this feature of somatic-psychiatric interrelations, and from it may be concluded that aggravation is the chief process represented by the intereaction of influenza on hypophrenia, where any effect at all is perceptible.

TONSILLECTOMY AND ACUTE RHEUMATIC FEVER AND CHOREA.

Eighty-five children, each of whom had presented one or several of the rheumatic manifestations before the tonsils were completely removed, were observed by William St. Lawrence, New York (*Journal A. M. A.*, Oct. 16, 1920), during an average period of three and one-half years after the operation was performed. The tonsils were markedly hypertrophied in 13 per cent of the cases, moderately so in 69 per cent of the cases, and not

enlarged in 18 per cent of the cases. They were the site of recurrent inflammation before the tonsils were removed in 73 per cent of the cases. "Sore throat" recurred after removal of the tonsils in 7 per cent of these. At least two operations were necessary before the tonsils were completely removed in 22 per cent of the cases. The tonsilar lymph modes were enlarged in 100 per cent of the cases before the operation was performed, while in 59 per cent of the cases they were impalpable afterward. One or more attacks of acute rheumatic fever had occurred in forty-two cases before the tonsils were removed. After tonsillectomy there was no recurrence after the operation in twenty cases, or 50 per cent. Sixty-one cases showed myositis and bone or joint pains before the operation was performed, and there was no recurrence in forty-seven cases, or 77 per cent. Fifty-eight cases of organic disease of the heart were present in the series. Twelve of the patients had suffered at least one attack of cardiac failure before the tonsils were removed. One patient suffered one attack afterward. The exercise tolerance in the cases of cardiac disease seemed to be favorably influenced by tonsillectomy in the instances in which indications existed for the removal of the tonsils. Nutrition and general health were improved, and intercurrent disease was less common after the tonsils were removed.

ABSCESS OF LUNG.

Seven cases are cited by U. J. W. Peters, Birmingham, Ala. (*Journal A. M. A.*, Oct. 16, 1920). He advocates early drainage by the two-stage operation under local anesthesia as the treatment which will give the highest percentage of recoveries. The use of bismuth paste in those cases in which the drainage tract refuses to heal has seemed to hasten the closure of the fistula.

BEHAVIOR OF BLOOD PRESSURE DURING USE OF STOMACH TUBE.

Blood pressure readings were taken by C. A. McKinlay, Minneapolis (*Journal A. M. A.*, Feb. 12, 1921) in a series of cases in which stomach lavage was performed as a routine diagnostic and therapeutic procedure. The only selection made was to include cases in which there was hypertension. As a rule, there was an increase in blood pressure of from 20 to 50 mm. of mercury with the passage of the stomach tube. There was a greater increase in those cases in which there was retching. The increase in blood pressure was not dependent on straining or mental excitation. The percentage of increase was greater in cases in which there was hypertension. Cases in which there was hypertension when under the physiologic effects of pilocarpin giving vagus inhibitory action showed an average increase in systolic blood pressure which was less than the increase when pilocarpin had not been given. Similar cases with diminished vagus inhibition following atropin showed no marked variation in the average increase from that noted in cases without atropin.

PREVENTIVE MEDICINE

Edited by
W. D. STOVALL, Chairman
Section on Preventive Medicine, State Medical Society of Wisconsin

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HYGIENE OF SCHOOL CHILDREN AND SCHOOL SANITATION.*

BY JOHN P. KOEHLER,

MILWAUKEE.

We will not take time to review the history of medical inspection of schools, because we are not concerned so much as to when and where this great work began as we are with the question of how it can be introduced into every school of the land, with the least opposition and expense and the greatest efficiency. The health supervision of school children has passed the experimental stage and can no longer be considered a passing fad, created by someone in need of a job.

We have at last begun to realize that the future of the State is dependent upon the health of its citizens and the health of its citizens is dependent upon the health of its children. In the past, we have heard a great deal concerning the conservation of our natural resources of lumber, coal, iron and oil, but at last we have reached the point where child life is considered the most valuable raw material that can be conserved by the State.

We are beginning to realize that it is no safer to entrust the parents with the health of their children than it is to leave their education entirely with them. Permit me here to quote from "Health Work in the Schools," by Hoag and Terman, as follows:

"If all parents were intelligent in regard to health matters, it would not be so necessary for schools to make a special study of the physical conditions of the children entrusted to their care. All that could then be fairly required would be the guaranty of a healthful school environment, including such things as good ventilation, correct methods of lighting and heating, sanitary plumbing, the control of contagious diseases, frequent recesses, sufficient physical training and the proper sort of health instruction. But it is a fact and not a theory that not all parents possess the special knowledge which is necessary for the hygienic supervision of physical and mental development.

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*Read before the Fifth Biennial Conference of the Health Officers of Wisconsin

Even intelligent parents may be unable to detect the early symptoms of physical disorder, just as they may be unable to decide upon the best methods or texts for teaching history or geography. They do not see the defects in their own children because they are used to them. Many are so superstitious as to prefer to treat adenoids by suggestion, others so ignorant as to interpret pediculosis capitis as a sign of good health. Plainly, therefore, it becomes the duty of the School Department to furnish not only a healthful school environment, but also a health guardianship over its pupils."

The argument that the health supervision of school children interferes with the rights of the parents, has no more value than the same argument against compulsory education. The old conception that parents can do as they please with their children can no longer be accepted when it comes to education and we hope that this theory will soon be discarded when it comes to the consideration of children's health.

There is still some opposition to health supervision of schools, on the part of some medical men, who erroneously consider the school physician a competitor instead of a medical missionary, who is seeking those that have physical ills and pointing out to them the way of physical salvation. Instead of taking away from the family physician, the school nurse and school doctor invariably send him work.

Most physicians do not seem to care how much work the chiropractors, Christian Scientists, Spiritualists and other irregular practitioners take away from them. They usually try to console themselves with the thought, "Oh, I've got enough work anyway." But when the City, County, State or Federal Government attempts to do medical work, which is usually along the preventive lines and almost entirely neglected by the family physician, they wail and they threaten until many times good work is entirely discontinued or so modified as to be ineffective.

Does any medical man believe that the chiropractors or Christian Science healers would protest if the City or State maintained public institutions, practicing, teaching and preaching chiropracty or Christian Science? The medical practitioners should be grateful to public health agencies for advertising and recommending the regular medical profession, otherwise the quacks and charletans with their glaring newspaper advertisements would soon be treating the majority of the innocent and ignorant public. The only way a public health agency can take away work from the medical profession is by doing as some of the doctors unfortunately do, and as many would like to have public health agencies do, and that is to do very poor work.

Never worry about any doctor or any public institution that does honest and efficient work, because they will make converts to your profession, and the more converts, the more work.

Physicians are not only very unfair, but very short-sighted, when they say to the parents of school children, "Oh, I wouldn't pay any attention to that notice from the school doctor, there is nothing wrong with your child. If that doctor knew anything, he would not have time to do school work." I would like to say right here that I know a great many men doing school work and they are the most public-spirited, the most conscientious and the most scientific men in the community.

Health supervision of schools has also suffered because the family physician is so unwilling to cooperate with the school nurse. It is quite common to find a doctor who speaks disparagingly of everything that the school nurse does, because he does not want anyone to think for a minute that the nurse discovered anything about his patients, which he overlooked.

A nurse with special training and daily school experience is more apt to detect contagious and parasitic diseases and observe physical defects than the average busy medical man who is accustomed to seeing and treating only acute conditions.

A great deal of opposition to health supervision of school children is due to a misconception as to the purpose of the work. No sane individual will oppose medical supervision of schools, when they learn that its primary purpose is to protect the children from contagious diseases. We know that most contagion is spread by contact and the more children one child comes in contact with, the more apt it is to catch something. When the law compels a child to enter a room with forty or more other children, the least we can do for that child is to see that its life in school is no more in danger than if it remained at home.

This can be at least partly done:

1. By placarding or quarantining all homes

where there is a contagious disease, which of course can not be done unless the health officer is notified of their existence.

2. Contagious disease can be controlled to some extent by instructing teachers on the early symptoms of contagions diseases and encouraging them to exclude all children with any such symptoms.

3. By having a nurse or doctor visit the homes of all children that have been absent two or more days, unless the cause of their absence is known to the teacher.

4. By requiring a physician's or nurse's certificate or an examination in school by doctor or nurse, of all two-days absentees before admitting them to the class room.

5. By examining all children for contagious diseases after every vacation period of a week or more.

6. By requiring that every child be vaccinated against smallpox before permitting it to enter school.

7. By placing the names of children, who were placarded or quarantined for a contagious disease, on a roll of honor.

8. Contagious disease can be controlled to some extent by instructing parents, teachers and children on how contagion is spread and how to prevent it.

9. By closing school whenever any serious contagions disease spreads beyond control.

Another important function of health work in schools is the finding and correcting of physical defects. The most common defects are: Diseased tonsils, running ears, heart defects, defective vision, adenoids, bad teeth and malnutrition, and can be discovered:

1. By an observing teacher who has had some instruction what to look for.

2. By a school nurse who should make a routine physical inspection of every child at least once a year.

3. By a school doctor who should make a thorough physical examination of every child during its first year in school.

It is better to make only one examination and do it well, by removing the clothing and doing it in the presence of a parent, than to examine the child annually very superficially as is done in most schools at the present time.

Finding the defects is of little value compared to the correcting of defects. We see many reports telling us of the thousands of defects found, but very few telling us of thousands of corrections made.

Correctable defects in children can usually be corrected:

1. By informing the child's teacher of existing defects and telling her how she can co-operate to have them corrected.

2. By informing the parents of the physical defects through a note sent home with the child.

3. By having the nurse call at the home to explain to parents the danger of leaving defects uncorrected and to assist them in making arrangements for their correction.

4. By having doctor or nurse re-examine children with serious defects every month to learn what has been done for their correction.

5. By having superintendent of schools or local health officer write an official letter to parents urging them strongly to give their children proper attention.

6. By making possible free medical and surgical attention for all children whose parents are unable to pay.

7. By refusing to pass children physically unfit.

When we force children into schools, it is not only our duty to protect them from contagious diseases, but their work and environment should be so planned that attending school does not become a dangerous occupation. The school building and grounds should be kept at least as hygienic and sanitary as a well kept home.

There is no use of preaching sanitation to children when schools do not practice it. If we found a home looking as dirty as some of our rural and parochial schools do, we would say that the occupants are shiftless, ignorant and lazy. Why not make the same diagnosis of those who are responsible for dirty schools? Even under the most sanitary and hygienic surroundings, children do not get any too much fresh air, healthful exercise and play. School life is not the normal life for children and I believe that we will never have more normal children until we stop compelling children to sit in abnormal positions in abnormal seats for abnormal periods of time.

The foundation of all health supervision should be health education. Contagious diseases, physical defects and unsanitary surroundings are mostly symptoms of ignorance. The treating of symptoms

is only justifiable as an emergency measure and we should lose no time in getting at the disease proper, which is ignorance.

In the past, children have been taught very little concerning matters essential to health. One reason there is so much work for the school doctor and nurse at the present time is that the teachers of the past knew so little about health matters, that it was impossible for them to teach even the A B C of health.

Health, like religion, can best be taught to children. Good health habits taught to children will be carried home by them to other members of the family. If anyone can change the habits and customs of parents, it is the children.

There are many other ways in which health work in schools can accomplish a great deal of good; one is to examine children to learn their mental capacity. It is unfair to make all children of the same age do the same mental work because they are mentally so different, and a good school doctor can make life easier for the children as well as for the teacher by helping to classify children according to their mental instead of chronological age.

Athletics in schools needs medical supervision and should be watched over by the school children's physician. Many school teachers need health supervision and they should not be forgotten by the school physician and nurse.

The need of health supervision in schools seems so apparent to many of us that we can not understand why it has not become a vital part of every school in the land. Whether this slow development is due to the opposition of certain religious or medical organizations, or because it has been left entirely too much to a "penny wise and pound foolish" school board, or to a $50 a year health officer, I can not say, but something is wrong somewhere when we are willing to employ two teachers to amuse forty or fifty children in the kindergarten and fail to employ one nurse to watch the health of a thousand children. Are we, due to our ignorance, like the proverbial cat that plays with its victim before exposing it to death? Or is it simply some more evidence to prove that the public is more willing to be taxed for luxuries than it is for necessities of life?

When $1,500 will employ a school nurse for a year, there is no reason why health supervision of school children in any community should be left entirely in the hands of Providence and charitable organizations.

If local officials are too slow in getting started, let us have a State School Hygiene Department to help them get started.

THE MARTHA WASHINGTON HOME,

54th and Cedar Sts, Wauwatosa, Wis.

A Maternity Hospital and Home.

The Martha Washington Home, 54th and Cedar Sts., Wauwatosa, Wis., was established in 1894 for homeless, friendless and unfortunate girls. It has been in its present location for the last ten years. Nationality, color or religion has never been an obstacle to those who sought its shelter. The work has always been non-sectarian.

The Medical Staff is selected from the best in the city and when it is understood that in its more than twenty-five years of service no mother has lost her life, there have been no blind babies and very few deaths among the children, the hospital record is second to none.

The Home has twenty-five single beds and three dormitories: one with six beds and two small ones with three beds each. The hospital is quite complete with nurses who have been specially trained for the work.

The building is beautifully situated with ample grounds for recreation and of easy access to the City of Milwaukee. The work has been under the direct supervision of its founder, Mrs. Julia Kurtz, who has always been its Manager and General Superintendent.

The Medical Staff consists of: Dr. Philip F. Rogers, Surgeon; Dr. Thomas C. Phillips, Eye and Ear Specialist; Dr. F. J. Gaenslen, Orthopedic Specialist; Dr. G. H. Fellman, Specialist in Children's Diseases and in Obstetrics; Dr. P. M. Currer, Dr. F. W. Kappelmann, Dr. J. J. McGovern, Dr. Harlow S. Roby, Dr. U. Senn, Dr. J. E. Reuth, Dr. J. W. Smith, Dr. Robert Braun, Dr. J. E. Armitage and Dr. A. M. Dorr.

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Manitowoc	A. M. Farrell, Two Rivers	V. V. Kellner, Maribel.
Marathon	R. W. Jones, Wausau	M. L. Jones, Wausau.
Marinette-Florence	J. W. Boren, Marinette	C. H. Boren, Marinette.
Milwaukee	J. J. Seelman, Milwaukee	Dan. Hopkinson, Milwaukee.
Monroe	T. J. Sheehy, Tomah	L. H. Prince, Sparta.
Oconto	R. J. Goggins, Oconto	C. J. Ouellette, Oconto.
Oneida-Forest-Vilas	W. C. Bennett, Rhinelander	E. R. Boyer, Rhinelander.
Outagamie	N. P. Mills, Appleton	V. F. Marshall, Appleton.
Ozaukee	G. S. Cassells, Port Washington	A. A. Mesch, Saukville.
Pierce	C. A. Dawson, River Falls	Rollo Cairns, River Falls.
Portage	D. S. Rice, Stevens Point	F. A. Marrs, Stevens Point.
Price-Taylor	G. C. Nedry, Medford	G. C. Wichman, Rib Lake.
Racine	F. C. Christensen, Racine	Susan Jones, Racine.
Richland	H. C. McCarthy, Richland Center	G. Benson, Richland Center.
Rock	C. H. Sutherland, Janesville	E. B. Brown, Beloit.
Rusk	C. E. Bugher, Ladysmith	L. M. Lundmark, Ladysmith.
Sauk	D. M. Kelly, Baraboo	Roger Cahoon, Baraboo.
Shawano	A. J. Gates, Tigerton	W. H. Cantwell, Shawano.
Sheboygan	R. M. Nichols, Sheboygan	G. J. Hildebrand, Sheboygan.
St. Croix	W. H. Banks, Hudson	W. H. Banks, Hudson.
Trempealeau-Jackson-Buffalo	N. S. Simons, Whitehall	F. T. Weber, Arcadia.
Vernon	J. Christenson, Westby	F. E. Morley, Viroqua.
Walworth	J. M. Marsh, Elkhorn	J. H. Young, Elkhorn.
Washington	H. F. Weber, Newburg	A. H. Heidner, West Bend.
Waukesha	G. H. Perrin, Menomonee Falls	S. B. Ackley, Oconomowoc.
Waupaca	E. H. Jones, Weyauwega	H. A. Jefferson, Clintonville.
Winnebago	F. G. Connell, Oshkosh	H. W. Morgenroth, Oshkosh.
Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

BARRON-POLK-WASHBURN-SAWYER-BURNETT COUNTY

A meeting of the B-P-W-S-B County Medical Society was held in Cumberland, Tuesday, March 1. A splendid program was given, as follows: "Goitre in a General Way," Dr. F. J. Plondke, St. Paul; "Differential Diagnosis between Mongolian Idiot, Cretinism and Rickets," Dr. Birnberg, St. Paul; "Borderline Thoughts between Dentistry and Medicine," Dr. Babcock, Cumberland. Papers were also read by Dr. Wallis of Rice Lake and Dr. Cornwall of Amery and a number of clinical cases were presented.

D. L. Dawson, M. D., *Secretary.*

DANE COUNTY.

A joint meeting of the Dane County Medical Society was held with the Dane County Dental Society at the Madison Y. M. C. A., February 4. Dr. G. V. I. Brown of Milwaukee gave a very interesting and instructive lecture on "Plastic Surgery," illustrating same with slides showing the various stages in complex operations on soldiers whose faces had been badly wounded.

KENOSHA COUNTY

The Kenosha County Medical Society held its regular meeting at the Elks' Club, February 4, eighteen physicians being present. Dr. Otto H. Foerster of Milwaukee conducted an interesting skin clinic at which five cases were presented, following which he gave an illustrated lecture on "Common Skin Affections."

MILWAUKEE OTO-OPHTHALMIC SOCIETY

The regular meeting of the Milwaukee Oto-Opthalmic Society was held in the Colby-Abbot building society rooms, February 25. Papers were presented by Doctors N. M. Black, C. S. Beebe, J. S. Gordon and H. B. Hitz.

MILWAUKEE MEDICAL SOCIETY

A meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot building, Tuesday, February 8, at 7:45 P. M. Considerable business was transacted, after which followed a presentation of clinical cases and pathological specimens. Papers were read by Dr. W. F. Lorenz, Mendota, on "Cerebro spinal fluid in Syphilis," Dr. Homer K. Nicoll, Chicago, on "The Relation of the Wassermann Test to Treatment," and Dr. J. J. Seelman, Milwaukee on "Newer Conceptions of Syphilis with Special Reference to Partial Wassermann Reaction." Discussion of these papers was opened by Drs. D. W. Roberts, Wm. Thalheimer, and A. H. Margot.

The regular meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot building, February 23. Plans for leasing other rooms for the society were discussed as the present rooms are too small and the lease on them expires soon. Dr. C. A. Evans presented a paper on "Unlocalized Intracranial Injuries—Indications for Surgical Treatment," Dr. Nelson Black one on "The Eye as a Factor in the Diagnosis of Increased Intracranial Tension."

Oscar Lotz, M. D., *Secretary Pro Tem*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Friday evening, February 11. After transaction of the regular business, two papers were presented as follows: "The Larynx in Tuberculosis," by Dr. Wm. H. Halsey, and "Some Infant Feeding Problems," by Dr. A. B. Schwartz. The society voted $1,000 for furthering legislation beneficial to the medical profession and for gathering information regarding the cost of various public health agencies and the benefits derived from them.

Daniel Hopkinson, M. D., *Secretary.*

OUTAGAMIE COUNTY.

The monthly meeting of the Outagamie County Medical Society was held February 25, at the Appleton Y. M. C. A. A supper at 6:30 preceded the meeting, guests being present from Green Bay, Neenah, Menasha, Oshkosh and Fond du Lac. Dr. Emil G. Beck of Chicago gave an interesting lecture on "Immunity vs. Disease—the Overbalancing of the Same by Surgery."

V. F. Marshall, M. D., *Secretary.*

OZAUKEE COUNTY.

The annual meeting of the Ozaukee County Medical Society was held at Thiensville, February 10, the majority of the members being present. Only routine business was transacted, the members voting to take up the important business matters at the next regular meeting.

ASSOCIATION NEWS

NOTICE.

The next annual clinical session of the Wisconsin Surgical Association will be held at Marshfield, Wis., on Wednesday and Thursday, May 18th and 19th, 1921. All members of the State Medical Society are invited to attend this session.

The preliminary program of this meeting will appear in the next issue of the Journal.

Daniel Hopkinson, *Secretary.*

AMERICAN CONGRESS ON INTERNAL MEDICINE.

At the annual meeting of the members of The American Congress on Internal Medicine, held at Baltimore, Md., week of February 21-26, the following Officers were elected:

President—Dr. Sydney R. Miller, Baltimore, Md. Clinical Professor of Medicine, Johns Hopkins University.

Vice-President—Dr. Ellsworth S. Smith, St. Louis, Mo. Professor of Medicine, Washington University.

Second Vice-President—Dr. James Rae Arneill, Denver, Colo. Professor of Clinical Medicine, University of Colorado.

Secretary-General—Dr. Frank Smithies, Chicago, Illinois. Associate Professor of Medicine, University of Illinois.

Treasurer—Dr. Clement R. Jones, Pittsburgh, Pa. Professor of Medicine, University of Pittsburgh.

At the annual meeting of the Officers and Councilors of The American College of Physicians, held at Baltimore, Md., February 25th, 1921, the following Officers were elected:

President—Dr. James M. Anders, Philadelphia, Pa. Professor of Medicine, Graduate School of Medicine, University of Pennsylvania.

Vice-President—Dr. Frederick Tice, Chicago, Ill. Associate Professor of Medicine, University of Illinois.

Second Vice-President—Dr. C. C. Bass, New Orleans, La. Professor of Research Medicine, Tulane University.

Secretary-General—Dr. Frank Smithies, Chicago, Ill. Associate Professor of Medicine, University of Illinois.

Treasurer—Dr. Clement R. Jones, Pittsburgh, Pa. Professor of Medicine, University of Pittsburgh.

"SAVE YOUR SIGHT CAMPAIGN."

A nation-wide save your sight campaign is to be conducted by the recently organized EYE SIGHT CONSERVATION COUNCIL to acquaint the public with the importance of eye care and to urge the universal eye examinations of school children, workers in industry and clerks in stores and offices.

Special literature will be sent to teachers, employers and those especially interested in the advancement of efficiency and welfare in industry. Charts and posters are to be placed in school rooms and factories visualizing eye care, depicting the advantages of correcting ocular defects, and warning against eye strain and its attending evils.

The Eye Sight Conservation Council is a membership organization. The Directors and Councillors are professional men representing various organizations devoted to health, welfare, education, science and industrial betterment.

The following are the officers: *President*—L. W. Wallace, New York, N. Y., who is President of the American Society of Industrial Engineers and recently elected an officer in the newly formed Federated American Engineering Societies of which Herbert Hoover is President.

Vice-President—Cassius D. Wescott, M. D., Chicago, Ill., Chairman of Committee on Conservation of Vision of the Council of Health and Public Instruction of the American Medical Association.

The other directors are: R. C. Augustine, Decatur, Ill. President of the American Optometric Association.

Bailey B. Burritt, New York City, General-Director New York Association for Improving the Condition of the Poor.

R. M. Little, New York City, Director of the Safety Institute of America—member of the Executive Committee of the National Safety Council.

The personnel of the Board of Councillors is to be carefully selected and so far but a few have been chosen, these being:

Dr. Thos. D. Wood, Teachers' College, Columbia University. Prominent in educational circles and chairman of the Joint Committee on Health Problems in Education of the National Council of the National Educational Association and the A. M. A.

Dr. Frederick R. Green, Chicago, Ill., Secretary of the Council on Health and Public Instruction of the American Medical Association.

W. S. Rankin, M. D., Raleigh, N. C., State Health Officer of North Carolina, Member Executive Committee American Public Health Association.

Arthur L. Day, Ph. D. and Sc. D., Director in charge of Geophysical Laboratories Carnegie Institute, Washington, D. C.

Allen McLoughlin, M. D., Asst. Surgeon-General, U. S. Public Health Service, Washington, D. C.

Guy A. Henry, Times Building, New York City, is the General-Director.

The financing has been handled in a manner quite unusual. The optical industry and trade were approached directly on the principle that a movement of this nature should first of all be supported by an industry which will ultimately be benefited. The subscribing and underwriting of a sum was realized sufficient to assure success to the undertaking. While at this stage the financing is by optical interests, generally support is not restricted to such interests and all activities of the organization will, at all times, be conducted free from the influence of commercial interests. The form of government safe-guards against the possibility of any interest gaining ascendency and assures the conduction of all activities along broad humanitarian lines strictly in accordance with the following:

OBJECTS:—TO PROMOTE THE GENERAL CONSERVATION AND BETTERMENT OF VISION, by:

Arousing public interest to a proper appreciation of the importance of eye hygiene and the care of the eyes, especially in so far as it pertains to defective vision and protection in hazardous occupations;

Disseminating knowledge regarding the opties of the eye, the prevalence of and the need of correcting visual errors, and of suitable protection against the special hazards and eye strain encountered in various industrial occupations;

Circulating information on the proper lighting of homes, schools, factories, offices and all private and public buildings;

Striving to bring about the universal eye examinations of industrial workers and of school children, both rural and urban, also, urging the importance of periodical eye examinations for everyone;

Developing or improving optical aids for the alleviation of visual troubles;

Compiling reliable data, publishing and circulating literature pertaining to eye care;

Enlisting the aid of and rendering service to State and Federal Governments and all departments of health and education;

Cooperating with all existing agencies concerned in any degree with the movement for better vision, and striving to coordinate their efforts;

To act in all of these enterprises without bias or prejudice, actuated preeminently by a desire to further the public welfare and to increase the efficiency, comfort and happiness of humanity.

The work of this organization will be of particular interest to the ophthalmologists of the country and their assistance and co-operation is desired.

CORRESPONDENCE

Chicago, January 27, 1921.

Secretary,
Wisconsin State Medical Society.

Dear Sir:—

In behalf of the Henry Baird Favill Memorial Committee I am enclosing you their announcement together with an abstract of their plans, and asking you to make some notice of the same in your Journal if possible. As Dr. Favill was so well known in his own State, they are quite sure the matter will be of interest to many.

Very truly yours,
N. D. Sibley, *Secretary.*

January 25, 1921.

MEMORIAL TO DOCTOR HENRY BAIRD FAVILL:

Following the death of Dr. Henry B. Favill in 1916, the City Club and the Commercial Club of Chicago appointed committees to form a larger committee to plan a Memorial of his devoted life and service. The Report of the Committee has just been made public in a letter addressed to Doctor Favill's friends.

It says:

"Many suggestions were made to us for the form of a Memorial.

"We considered the wide range of subjects—medical, civic, agricultural—appropriate for a Memorial to Doctor Favill.

"We have reached the conclusion that any Memorial to him ought to be a work in medicine, and to speak truly of Doctor Favill's life, it should have a public application and influence.

"Among the plans which we considered were two which seemed so pre-eminently appropriate that we feel each should be recognized: One is to place a Memorial in St. Luke's Hospital where Doctor Favill was, at the time of his death, the chosen leader of its medical forces. The other is to found a work to carry forward Doctor Favill's life-long purpose to help to establish the principle of individual and community health as the basis of medical work and as the essential foundation of human achievement.

"These plans are different in form, but alike in purpose—to do him honor and to carry forward his life work."

The Report then outlines the plans for "THE HENRY BAIRD FAVILL MEMORIAL LABORATORY, at St. Luke's Hospital and THE HENRY BAIRD FAVILL FOUNDATION"— a fund of which the income shall be used in the special field of preventive medicine, "in promoting public education in health and hygiene."

The Memorial Laboratory, the Report says, is to be "for diagnosis and research and especially devoted to the study of problems relating to the practice of internal medicine." It is to be an integral part of St. Luke's Hospital and have every approved facility for diagnosis available for patients. In addition there will be instruction and fellowships in its different departments.

Of the Foundation for preventive medicine, the Report says:

"Doctor Favill's contribution in this field of his profession was unique. He was a pioneer. He wanted to stem the tide of human ills by reaching them at their sources. In his work of training and developing physicians, he emphasized the importance of building health, rather than repairing it—of conquering disease by preventing it.

"The work we have in mind would lay the emphasis on the fundamental prevention of disease by the upbuilding of health.

"The operations of this work will have an essential relationship to the community and to those public agencies that deal with health. As this work grows, it should become a source of scientific information and a power on public health questions for the community."

These prophetic words of Doctor Favill are quoted:

"It is time there was an awakening, and that healthcare, plan and practice, should be a function of youth and health, not of age and decrepitude.

"*The future will see the school of hygiene far more prominent than any other school of learning.*

"I am optimist enough to hope that it will see *hygienic living a badge of intelligence and standing*, and that there will be a dignity and power in leadership in this field quite commensurate with its importance *as the foundation of mental integrity and moral discernment.*"

For each Memorial, the Committee suggest the creation of a fund of $350,000 or more in hands of Trustees appointed by the Committee to carry out the purposes of the Memorial and insure their fulfillment. The Report concludes:

"We are ready to receive such gifts as may be offered for the purpose of these Memorials. If no choice between them is indicated, the gift will be equally divided.

"Every gift, whatever the amount, will be received in the spirit of remembrance; for the thought of the giver and not the size of the gift is the Memorial to Doctor Favill we wish to express and preserve. In all publications the names will be printed without any amounts. The Merchants Loan & Trust Company, 112 West Adams Street, has kindly consented to act as Treasurer."

The Report is signed by the Memorial Committee.

Edgar A. Bancroft, Chairman

Cyrus Beatley — Cyrus H. McCormick
Anita McCormick Blaine — Allen B. Pond
R. C. Dudley — W. E. Skinner
Frank W. Gunsaulus — W. D. Sibley, Secretary
E. D. Hulbert.

NEWS ITEMS AND PERSONALS

Two changes in the medical staff at the Soldiers' Home Hospital have recently occurred. Dr. B. Bentley has been transferred to the Danville, Illinois, home and Dr. M. W. Snell, former senior assistant surgeon at the Danville home has been transferred to Milwaukee. Dr. P. G. Lasche has gone to Dwight, Illinois, where he will be engaged in U. S. Public Health Service work.

Conversion of the new Industrial Home for Women at Taycheedah, near Fond du Lac, into a hospital for the treatment of shell-shocked Wisconsin soldiers has been suggested by the legislative visiting committee. The committee states that the home is unused and could easily be converted into a hospital.

The hundredth anniversary of the birth of Dr. Elizabeth Blackwell, the first woman to secure a medical degree, occurs this month and will be duly celebrated. Dr. Blackwell was determined to secure a medical education and applied to a number of medical schools for admission as a student, most of them refusing her appeal. But the faculty of Geneva College at Geneva, New York, left the admittance of a woman student to the men students and they voted in favor of letting her enter. She graduated from that institution in the early forties.

A testimonial banquet in honor of Dr. and Mrs. Daniel Hopkinson, Milwaukee, as a token of the esteem in which Dr. Hopkinson is held, was given at the Athletic Club, February 24. The banquet was attended by over five hundred members of the medical profession from the county, state and outside points, public officials and friends. Among the speakers were Dr. W. A. Evans of the Chicago Tribune and District Attorney W. C. Zabel.

The incorporators of the Wausau Hospital held their first meeting for the election of a board of directors and officers, February 12. Dr. D. T. Jones of Wausau was elected a director for three years and also president of the board.

Dr. F. A. Nause has opened offices in Sheboygan, his former home. Dr. Nause was discharged from the medical corps of the U. S. Navy in August, 1920, and since that time has been taking a postgraduate course in surgery at the Hahnemann Hospital, Chicago.

Articles of incorporation for the Edgerton Memorial Hospital have been filed with the register of deeds. The association is organized without capital stock and is to be operated exclusively for benevolent and charitable purposes, without profit, and will be dedicated to the soldiers, sailors and marines of the World War.

Dr. Joseph C. Jones of Milwaukee has received a formal notification from the French government that he has been cited for the Croix de Guerre for bravery on the battlefield during the second battle of the Argonne.

Dr. H. M. Stang, formerly of Eau Claire, has returned to become associated with the firm of Drs. Midelfart and Mathiesen. Dr. Stang is a graduate of Harvard and has recently completed a postgraduate course in cystoscopy at the New York medical school.

The directors of Mercy Hospital of Janesville have started a drive to secure donations of $75,000 to pay off a part of the $175,000 indebtedness on the hospital. The indebtedness is due to the four story addition recently built, and at a recent public meeting for the benefit of the campaign for funds, Dr. Wm. E. Quinn, dean of the medical department of the University of Illinois gave an address on the necessity of aiding the institution from a community standpoint.

Dr. Russell W. Olson, for the past two years house physician at Emergency Hospital, Milwaukee, has resigned to engage in private practice. He will be associated with Dr. B. H. Oberembt in the First Wisconsin National Bank Building.

Dr. J. W. Bird of Stevens Point has announced that he will be a candidate for the position as postmaster there.

Dr. E. P. Weber has opened offices for general practice in the village of Mequon near Thiensville.

The New York Post-Graduate Medical School and Hospital announces that there will be available this year six scholarships under the terms of the Oliver-Rea Endowment. The purpose of the Endowment is to award scholarships to practicing physicians of the United States to defray in full the expenses of tuition at the New York Post-Graduate Medical School. According to the wishes of the donor, physicians in the State of Pennsylvania will receive preference in the award of these scholarships. Applications may be sent to the President of the New York Post-Graduate Medical School and Hospital, 20th Street and Second Avenue, New York City.

"Terminal fumigation" of homes following cases of communicable disease is no longer required according to action taken by the state board of health, and health officers throughout the state were notified of the amended rule in a statement sent out this week. The action means that the use of solidified formaldehyde, permanganate of potash and formaldehyde, or a formaldehyde spray so as to liberate formaldehyde gas in the room is not necessary. Other means are outlined. The new requirement follows:

"After a case of cholera, chicken pox, diphtheria, influenza, measles, cerebrospinal meningitis, plague, polimyelitis, rubella, scarlet fever, smallpox, tuberculosis, typhoid fever, typhus fever or whooping cough, and before the quarantine sign or placard is removed from the premises, the infected rooms must be disin-

fected under the immediate supervision and direction of the local board of health or its proper officer. The disinfection or cleaning up of the home can be accomplished by the use of approved chemical disinfectants, used as directed, or by thoroughly washing all surfaces and articles which may be infected with soap and water, or lye and water, followed by a thorough sunning or airing of the rooms.

"All discharges from the patient, including discharges from the nose, mouth and lesions, and all articles soiled by discharge from the patient in any of the diseases listed above must be thoroughly disinfected by immersing in a chemical solution of lysol, carbolic acid, milk of lime, chloride of lime, or other approved disinfectant. Fumigators now on hand may be used if desired. If the householder wishes to have rooms fumigated, there is no objection to having this done, but the material should be paid for by the householder. The chemicals used in terminal disinfection must be paid for by the town, village or city."

DEATHS

Dr. J. A. Jackson, 80 years of age, pioneer physician, Civil War surgeon and the father of three physicians, died at his home in Madison, February 11, following an illness of two years. Dr. Jackson was born in Wolverhamptom, England, August 8, 1840. He came to Madison with his stepfather, Dr. William Hobbins, in 1853, and entered the University of Madison a few years later. At the outbreak of the Civil War, he enlisted and was mustered into active service in September, 1861, and went to the front as regimental hospital steward of the 8th Wisconsin infantry volunteers. This appointment carried with it immediate charge of the regimental hospital during his service, toward the latter part of which he was commissioned assistant regimental surgeon.

Upon leaving the service, Dr. Jackson entered the Bellevue Hospital medical college, New York, from which he graduated in 1866. He first began the practice of medicine at Stoughton, returning to New York in 1871 for postgraduate work, after which he practiced for a short time at De Pere and Minneapolis and then settled in Madison where he remained in active practice for fifty years.

Dr. Jackson was an honorary member of the Phi Beta Pi of the medical school of the University of Wisconsin, and a member of the Dane County, Wisconsin State and American Medical Associations.

Dr. George F. King of Green Bay died at his home February 8, after two years of suffering due to being gassed while in service in France. Dr. King was born in Casco in 1889 and graduated from the Milwaukee Medical College in 1912. At the beginning of the war, he enlisted and was commissioned a captain, serving with the 32nd Division.

Dr. King was a member of the Brown-Kewaunee County, Wisconsin State and American Medical Associations.

Dr. Charles H. Lemon, Milwaukee, died at St. Mary's Hospital, February 22, following a stroke of apoplexy. Dr. Lemon was born in Philadelphia, January 28, 1863. He received a general college education at the University of Pennsylvania, and later studied for the Episcopal ministry at Nashotah, graduated, and for a short time preached at Waukesha and Stevens Point. He then studied medicine at Rush Medical College, Chicago, graduating in 1891, and located in Milwaukee.

For more than twenty-five years, Dr. Lemon has been chief surgeon for the T. M. E. R. & L. Company, Milwaukee, and has been medical director of the Employes' Mutual Benefit Association ever since it was organized. He was a member of many medical and surgical societies, having served as president of the Milwaukee Medical Society, the Milwaukee County Medical Society, the State Medical Society of Wisconsin, and the Wisconsin Surgical Association. He was also a member of the American Medical Association and for several years a member of the House of Delegates.

OPERATING WITH FLINT SCALPELS.

Stone Age tools are being used in a certain Bulgarian hospital to perform modern operations. In the absence of any surgical instruments whatever with which to operate, the Russian surgeons in charge have taken a leaf from the book of their prehistoric ancestors, and have chipped flints.

Dr. Bashilkef, former Bulgarian court physician, decided upon the expedient of flint bone scalpels for the Varna hospital after seeing the predominating percentage of head wounds among the refugees encamped without the city, who were the hospital's chief patients. Such operations were performed by the ancient Gauls, as their exhumed skulls prove. Moreover a freshly chipped flint has an excellent cutting edge and possesses perfect immunity from infection. And so crude, but thoroughly clean operations are being performed with flint knives.

Soon, however, the Varna hospital will be adequately supplied. The S. S. Hamlin, containing several tons of American Red Cross hospital supplies was recently unloaded at Constantinople, and these have been shipped to Varna. Meanwhile the entire surgical equipment consists of eight instruments, too rusty for use, and the only drugs on hand are two quarts of tincture of iodine, one pound of magnesium sulphate, one pound of bisulphate of soda and a little ipecac.

Investigations by the U. S. Public Health Service show that practically all bottle-fed babies thrive as well on powdered milk as they do on natural cow's milk; and that some who do not thrive on the cow's natural milk, do finely on the powdered. The National commission on milk standards urges health and food-control officials to encourage and not to hamper the dried milk industry.

The race is not to the swift but to the healthy. Keep fit.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

The History of the American Red Cross in Italy. By Charles M. Bakewell, M. D. New York: The MacMillan Co. 1920.

Old at Forty or Young at Sixty. By Robt. S. Carroll, M. D. New York: The MacMillan Co. 1920.

Diabetes. By Philip Horowitz, M. D. 27 illustrations. 2 color plates. New York: Paul B. Hoeber. 1920. Price, $2.00.

Sex and Life. By W. F. Roby, M. D. Richard G. Badger: The Gorham Press, Boston. 1920.

Sleep Walking and Moon Walking. A Medico-Literary Study, by Dr. J. Sadger, Vienna. Washington, D. C.: Nervous and Mental Disease Publishing Co. 1920.

The Radiography of the Chest. Vol I. Pulmonary Tuberculosis, with 9 line diagrams and 99 radiograms. By Walter Overend, M. D. St. Louis: C. V. Moshy Co 1920. Price, $5.00.

Hygiene of Communicable Diseases. By Francis M. Munson, M. D. Illustrated. New York: Paul B. Hoeber. 1920. Price, $5.50.

The Endocrines. By Samuel Wyllis Bandler, M. D., F. A. C. S., Professor of Gynecology in the New York Post-Graduate School and Hospital. Octavo of 486 pages Philadelphia and London: W. B. Saunders Company. 1920. Cloth, $7.00 net.

1919 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1,331 pages, 490 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth, $12.00 net.

Hygiene: Dental and General. By Turner. St. Louis: C. V. Moshy Co. 1920.

Physiology and Biochemistry in Modern Medicine. By J. J R. Macleod, M. D. Third Edition. St. Louis: C. V. Mosby Co. 1920.

The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russel D. Carman, M. D., Head of Section of Roentgenology in the Division of Medicine, Mayo Clinic and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota. Second edition, thoroughly revised. Octavo of 676 pages with 626 original illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $8.50 net.

A Laboratory Manual and Text-Book of Embryology. By Charles W. Prentiss, Late Professor of Microscopic Anatomy, Northwestern University Medical School, Chicago. Revised and rewritten by Leslie B. Arey, Professor of Microscopic Anatomy, Northwestern University Medical School. Third edition, enlarged. Octavo volume of 412 pages with 388 illustrations, many in color. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $5.50 net.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine Graduate School of Medicine, University of Pennsylvania. Fourteenth edition, thoroughly revised with the assistance of John H. Musser, Jr., M. D., Associate in Medicine, University of Pennsylvania. Octavo of 1,284 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $10.00 net.

The Practical Medicine Series. Under the general editorial charge of Charles L. Mix, A. M., M. D., 304 S. Dearborn St., Chicago: The Year Book Publishers. **Vol. II. General Surgery.** Edited by Albert J. Ochsner, M. D., F. A. C. S. 620 pages, illustrated. Price, $2.50. **Vol. III. The Eye, Ear, Nose and Throat.** Edited by Casey A. Wood, M. D., Albert H. Andrews, M. D., and Geo. E. Shambaugh, M. D. 380 pages, illustrated. Price, $1.75. **Vol. IV. Pediatrics.** Edited by Isaac A. Abt, and **Orthopedic Surgery,** edited by Edw. W. Ryerson, M. D. 256 pages, illustrated. Price, $1.75.

Pulmonary Tuberculosis. Handbook for Students and Practitioners. By Edw. O. Otis, A. B., M. D. Second edition., W. M. Leonnard, Publisher, Boston. 1920. Price, $3.50.

The Form and Functions of the Central Nervous System. An Introduction to the Study of Nervous Diseases. By Frederick Tilney, M. D., Ph. D., Prof. Neurology, Columbia Univ., and Henry A. Riley, A. M., M. D., Associate in Neurology, Columbia Univ. Foreword by Geo. S. Huntington, Sc. D., M. D., Prof. Anatomy, Columbia Univ. 591 figures containing 763 illustrations, 56 colored. Paul B. Hoeber, publisher, New York. Price, $12.00.

A Textbook of Pathology. By Wm. G. MacCallum, M. D., Professor of Pathology and Bacteriology, Johns Hopkins Univ. 2nd edition, thoroughly revised. Octavo volume of 1155 pages. 575 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $10.00 net.

The New Psychology and Its Relation to Life. By A. G. Tansley. 283 pages. New York: Dodd, Mead and Co. 1920.

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The Wassermann Test. By Charles F. Craig, M. A., M. D., F. A. C. S., Lt. Col., M. C., U. S. A., Professor of Bacteriology, Army Medical School, Washington, D. C. Second edition, revised and enlarged. Illustrated with colored plates, halftone plates and 61 tables. St. Louis: C. V. Mosby Co. 1921. Price, $4.25.

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BOOK REVIEWS

The New Psychology and Its Relation to Life. By A. G. Tansley. 283 pages. Dodd, Mead and Co., New York. 1920.

Mr. Tansley's new book seems to be one of the best general surveys of psychology now available and he has succeeded in presenting a clear statement of the subject. It covers the place of the unconscious mind in mental life, the activities of mental complexes, repressions, dreams, sex instincts and other topics discussed in the light of present day psychology research. His discussion of the "universal complex" is particularly interesting.

The contents are arranged under six divisions, namely, introductory, the structure of the mind, the energy of the mind, byways of the libido, reason and rationalization, and the contents of the mind. The work is recommended.

The Anatomy of the Nervous System, from the standpoint of development and function. By Stephen W. Ranson, M. D., Ph. D., Professor of Anatomy in Northwestern University Medical School, Chicago. Octavo volume of 395 pages with 260 illustrations, some of them in colors. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $6.50 net.

Dr. Ranson has succeeded in presenting a very scholarly and complete presentation of his subject. The work has been taken up from the developmental and functional standpoint and the student is led, in the very beginning of his neurological studies, to think of the nervous system in its relation to the rest of the living organism. This method of presentation should make more easy the correlation of the various neurologic courses in the medical curriculum.

An outline for a laboratory course in neuro-anatomy has been included and has been so arranged as to be easily adapted to any particular needs. The book is beautifully printed on a high grade paper and is splendidly illustrated with about 260 drawings, a number of them in color. The work is especially recommended as a textbook for school work and is quite the best for this purpose we have seen.

The Wasserman Test. By Charles F. Craig, M. A., M. D., F. A. C. S., Lt. Col. M. C. U. S. A., Professor of Bacteriology, Army Medical School, Washington, D. C. Second edition, revised and enlarged. Illustrated with colored plates, halftone plates and 61 tables. C. V. Mosby Company, St. Louis, Mo. 1921. Price, $4.25.

Dr. Craig has practically rewritten numerous portions of his first edition in order to incorporate everything of real value relating to the subject which has been published since the first appearance of this work. Several important changes have been made in the technique of the text as originally published by the writer, the most important being the addition of blood grouping and the directions concerning the preparation of the blood cell suspension used in the test. The author emphasizes the importance of selecting donors for the blood cell suspension from individuals belonging to group four of the Moss grouping and his adopting this procedure, believing it adds greatly to the accuracy of the technique when the antihuman hemolytic system is employed.

In this edition, there is included the modification adopted by the Hygienic Laboratory of the U. S. P. H. S. in performing the complement fixation test for syphilis. This method, as well as the author's has been authorized for use in the hospitals controlled by the U. S. P. H. S. Dr. Craig's work is again recommended as highly as the first edition.

A Text-Book of Pathology. By William G. MacCallum, M. D., Professor of Pathology and Bacteriology. Johns Hopkins University, Second edition, thoroughly revised. Octavo volume of 1155 pages with 575 original illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $10.00 net.

The second edition of Dr. MacCullum's Textbook of Pathology is a pretentious work of 1155 pages and has been thoroughly revised. It follows four years after the first edition which met with instant approval and universal praise. During these four years, the war has brought out much new material and great advances have been made along these lines. Dr. MacCallum has noted these by inserting paragraphs summarizing the new work or by rewriting whole chapters. The sections on shock, acid-base equilibrium, immunity and tuberculosis, meningococcal infections, pneumonia after measles, influenza, cholera, leprosy, etc., are rewritten from the author's own experience. In his preface to his second edition, he states that parasitic diseases are treated more at length because of the excellent work of the English and Japanese and because of wider recognition of their importance.

Many new illustrations have been added and some in the first edition which were unsatisfactory have been replaced by better ones. There has been no special change in the plan of the book. His work is a discussion of the general principles of pathology as illustrated by the study of the commoner and more important diseases. It is a splendid text and there is none superior. The illustrations, which are almost entirely from specimens studied in his own laboratory, are exceptionally good and there are many excellent plates in color. Dr. MacCallum is to be congratulated on this work.

American Red Cross Work Among the French People. By Fisher Ames, Jr. The MacMillan Co., New York. 1921.

Mr. Ames' work is an interesting narrative of the activities of the American Red Cross among the French during the World War and the months immediately following. It does not attempt to give a technical presentation of the work, nor does it attempt to take up post-war activities in detail. It is well and interestingly written and the halftone illustrations add to the pleasure of an evening spent with the book.

It will especially appeal to the lay reader, so many of whom gave so much of their time for this work during the World War.

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ORIGINAL ARTICLES

THE INCIDENCE OF GOITER IN WISCONSIN WITH SUGGESTIONS AS TO MEDICAL MANAGEMENT.*

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An examination of the mass of literature which has accumulated during recent years on the subject of goiter shows that the question of incidence has been largely ignored. The great majority of writers have plunged immediately into the more fascinating phases of the modern diagnostic methods, or have floundered about in search of therapeutic measures of genuine merit.

Recently, Levin ([1]) reported demonstrable thyroid enlargement in 30% of 583 soldiers examined for military service whose homes were about the Great Lakes. Jones ([2]) in a short paragraph devoted to the incidence of goiter tells us that it is 5 to 10 times more common in the Great Lakes section of the country than in the southern states. Canavan ([3]) examined 2,333 supposedly normal women at Wellesley College and reported the presence of an abnormally large thyroid in 16%. She states that the majority of these cases came from the so-called "thyroid district" of the middle west. At the University of California ([4]) in an examination of 731 students, thyroid enlargement was recorded in 17.6%. Hall, ([5]) examining 3,339 students at the University of Washington found thyroid enlargement in 17.93%. Marine and Kimball ([6]) in a survey of school girls in Akron, Ohio, found enlargement of the thyroid in 2,184 cases, 56.4% of the total number examined.

In this state, basing our deductions on the physical findings in the examination of 13,796 entering students at the University of Wisconsin, covering the years from 1910 to 1917, inclusive, we found demonstrable thyroid enlargement in 3,874 cases, or 28%, and exophthalmic goiter in 93 cases, or .6%. Of the total number (13,796) examined about 70% were from Wisconsin, 20% from neighboring states, and the remainder from more distant states and foreign countries. While it is conceded that this is not an accurate method of determining incidence, it is nevertheless highly representative of the population of the state. Moreover, these students were examined during the period of life when abnormalities of the thyroid are most likely to occur.

Age and sex incidence was as follows:

Male: Simple unclassified enlargement 21.9%; exophthalmic .29%.

Female: Simple unclassified enlargement 41%; exophthalmic 1.2%.

Average combined age 19.9 years.

Male, (130) .....19.1 years

Female, (170) .....20.4 years

Mortality statistics show that the average death rate in Wisconsin for the past five years from goiter is 2.4 per 100,000 while that for the entire United States for the corresponding time is 1.6 per 100,000. It is therefore evident by general concession on the part of all investigators and by an examination of our own figures that in Wisconsin we have a much higher percentage of individuals who have enlarged thyroids than is found in the country at large.

We are conscious of our geographical position in relation to the so-called "goiter belt"—an area occupied by the states adjacent to the Great Lakes, where goiter is known to be endemic. The question which confronts us in the present study is one over which students have labored for a good many years; namely, the cause of endemic goiter, a question which has been much discussed, but which has attracted the attention of comparatively few scientific investigators. In 1913 McCarrison ([7]) reviewing a mass of literature pertaining to the influence of water on the production of endemic goiter, and conducting some independent experiments of his own, concludes that there is

*Read before the State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920.

"no room for doubt but that water is not without influence in the production of goiter." Following up the same subject in a later paper he states, that the ideal conditions for the development of goiter are to be found in a "country district with an agricultural population living on porous soil which contains much organic matter and by virtue of its porosity or slope admits of the ready passage of organic matter into unprotected streams and wells that are the water supply of the population. It is in mountainous countries where limestone rocks abound that these conditions are most frequently found in combination." Administering matter separated from a so-called goiter producing water by means of a Berkfield filter he was able to produce goiter experimentally in man. He believes that boiling the water renders it innocuous.

Investigators ([8]) in Bavaria referring to the possible influence of geologic formation, conclude that this is not the primary or determining factor in the endemic distribution of goiter. However, the belief is ventured that the etiological factor is to be sought in water, the composition of which may, of course, be modified both by the condition of the soil and by the rock strata beneath. Bunting ([9]) believes that the explanation is to be found in the drinking water and that it is in the nature of an excessive precipitation and excretion of iodine in the organism, brought about by some chemical constituent present in an over-abundance in all hard waters. A few years ago Sinclair ([10]) examining the intestinal excretion of both domestic animals and man in a goitrous district in Ontario found ameba constantly present. The same ameba were found in the drinking water. He claims to have developed a treatment (not described) which eliminates the ameba and effects reduction of the enlarged thyroid to normal. More recent students ([11]) of the situation in Switzerland find that the cause of endemic goiter cannot be attributed to any agency either a dissolved substance or an organism which is found in water exclusively, for in goiter regions thyroid enlargement was noted in experimental rats which received distilled and sterilized water to drink, while in goiter free regions, the supply of water obtained from sections of the country where goiter is endemic failed to provoke any thyroid hyperplasia whatever.

Even after just consideration is given to all those students who have devoted time and painstaking study to the relationship between drinking water and endemic goiter, we can do no more than admit that the evidence is as yet unconvincing and the subject is still full of possibilities for earnest students throughout the country.

Berg ([12]) after many years' experience in the conservative treatment of the disease emphasizes the etiologic importance of recurrent infections of the pharynx and tonsils. This Norwegian observer does not stand alone in support of this theory. Evans, ([13]) Pember and Nuzum ([14]), Kastner ([15]), and many others have made similar observations. In this connection we have to present our results of an intensive study of 300 cases of simple goiter, selected from our student examinations made in the fall of two different academic years, 1917 and 1918. Some of these individuals have been under observation for a period of three years and others for one year only. The following interesting observations were made: Some abnormality of the upper respiratory tract or teeth was noted in 95.6%, all except 13 cases. While there is necessarily considerable overlapping in many instances, due to combined lesions in the same individual, the total number of pathological lesions recorded is as follows:

TABLE I.

		No. of Cases	Percentage	Approximate total incidence for entire student body
Tonsillar Disease	202	..	67.3%	48%
Hypertrophied tonsils		52	17.3%	15%
Cryptic tonsils		150	50.0%	33%
Marked septal deformity		65	21.6%	20%

Following these students through the academic year we find that 212 or 70.6% had frequent in-

Nasal Defects	134	..	44.6%	35%
Hypertrophied turbinated		46	15.3%	10%
Nasal polypi		23	7.6%	5%
Carious teeth	22	..	7.3%	5%

The relative frequency of involvement of the different lobes is outlined below:

TABLE II.

Lobes involved	No. of cases	Percentage
Both lobes and the isthmus	158	52.6
Right and left lobes	58	19.3
Isthmus alone	51	17
Right lobe and isthmus	6	2
Left lobe and isthmus	5	1.6
Right lobe alone	15	5
Left lobe alone	7	2.3

fections of the upper respiratory tract. Thirty-seven girls and 9 boys, a total of 15.3%, for one reason or another were unable to carry on the prescribed course in physical training at the university. While the actual morbidity in terms of days lost has not been calculated for this group, it is obviously a great deal in excess of that observed for the entire student body. This is an illustration of the lowered resistance, so uniformly encountered in goitrous individuals; it is, we believe, one of the most important factors, which attaches itself to the problem of endemic goiter, whether or not it has any relation to the primary etiology of the disease.

The amount of iodine in a normal thyroid is known to be greater than in a colloid goiter. The normal gland has at all times full control over the body metabolism. The structure of the gland no doubt usually remains unaffected by intercurrent infections. It may or may not keep its normal function under the strain of repeated infections or persistent focal infection. In the so-called goiter districts, it is possible that there is for some unknown reason a deficient iodine content, perhaps from the time of birth or before in the thyroids of both man and animals, and that during subsequent infections when the metabolic regulating power of the thyroid is under stress, the gland makes an abortive attempt to meet the demand and some form of enlargement results.

The relationship between goiter in man and in animals has not been clearly defined. We know that some years ago the sheep industry in Michigan was partially paralyzed because of the prevalence of goiter and that the situation showed marked improvement after some preparation of iodine was introduced into the food of the young animals. In this state, for example, the frequency of goiter among dogs is a well recognized fact. It is apparently of the same character as that which is found in man.

We believe that there are common etiological factors and that this fact should receive due consideration in the conduct of any investigation into the etiology of endemic goiter.

We cannot here enter into an extensive review of the therapeutic measures which have been suggested for the treatment of goiter. There are, however, certain important landmarks which deserve especial mention. Reede, ([16]) outlining the continuity of events as they are supposed to occur in the development of exophthalmic goiter places *first* the possibility of "a period of infection leading up to hyperplasia of the thyroid and a goiter, with or without symptoms and beginning often in childhood." His observation that children should be protected against bacterial injury from the mouth and upper respiratory tract is well founded and whether or not we agree with him in his theory on the etiology of goiter, we must admit that there is a conspicuous lack of oral hygiene and corrective measures in the mouth and nasopharynx among children. This has a direct bearing on the most important feature in the treatment of goiter, prevention. If all children were promptly free from the harmful influence of focal and local infection it *might* make a marked difference in the figures for the incidence of goiter. In any type of goiter, whatever the age of the patient, one of the first steps in our investigation is to make a diligent search for a possible focus of infection. Many observers have recorded cases in which marked improvement, in some instances, complete recovery followed the removal of diseased tonsils or extraction of carious teeth. In our opinion, the removal of such infections removes the cause for increased thyroid activity and does not necessarily eradicate the original cause of disturbed thyroid function.

The work of Marine and Kimball ([17]) now awaiting confirmation by other observers, would lead one to believe that the administration of iodine is almost a specific in cases of simple goiter. While there is, no doubt, a certain type of goiter which is definitely benefitted by the ingestion of some preparation of iodine, it does not seem advisable to prescribe the drug routinely, especially since by our present diagnostic methods we can never be sure even in those thyroids which are apparently purely colloid, that there is not present also a certain amount of hyperplastic parenchymatous tissue.

We now have in mind three known cases of simple goiter, which under iodine medication promptly developed the symptoms of exophthalmic goiter. It is believed that thyroid extract and thyroid derivatives occupy much the same position in regard to the treatment of goiter as does iodine and that neither should be given except in carefully selected cases which are kept under close supervision. We do feel warranted, however, in advising the administration of iodine before

puberty as a preventive measure in goitrous districts. This must be done under careful supervision and in small doses. It is our habit to give syr. ferri iodid in 5 minim doses twice daily one week in each month to children under our constant care. After puberty the administration of iodine compounds is a more serious question for professional judgment.

Since we now have at our disposal a perfected method for the estimation of basal metabolism ([18]) we believe that this determination should be made, and repeated as often as necessary in all patients who seek advice either because of symptoms referable to the thyroid or for cosmetic reasons alone. It is by this method of examination that we can best determine the efficacy of any given treatment. This is especially true of cases in which the metabolic rate is increased.

The majority of authors have properly emphasized the importance of rest, mental and physical; isolation, careful nursing, protection from psychic trauma, etc. These general measures, suitably adjusted to meet the requirements of each individual, are essential in the successful management of a large percentage of goitrous patients.

It is our belief that in dealing with these cases of thyroid enlargement, whatever may be the particular pathological type, intensive study and a careful analysis of details is necessary before considering any method of treatment. There is no possible subdivision or grouping of cases which permits the application even in a stated group of a fixed and definite method of medical management. Individual attention is imperative.

SUMMARY.

In the examination of 13,796 entering students at the University of Wisconsin we found simple, unclassified thyroid enlargement in 28%, and exophthalmic goiter in .6%. The proportion of males to females was approximately 1 to 2, in both simple and exophthalmic goiter. This is a fair index of the incidence of goiter in Wisconsin.

The etiology of endemic goiter is still unknown. It is probably dependent upon a deficient iodine content in the thyroid gland, due to some unknown environmental condition, affecting both man and animals. This in itself might not be productive of goiter. It is our belief that the actual enlargement takes place during the course of acute or chronic infections, when the metabolic regulating function of the thyroid is severely overtaxed.

There is no specific form of medical treatment for any type of goiter. Each case requires individual study, and the treatment must be adjusted to the patient. The careful administration of minute doses of iodine in children who are kept under close supervision is a preventative measure worthy of trial. Any focus of infection should be promptly and thoroughly removed. Disturbing psychic factors must be considered and controlled. Isolation, absolute rest in bed, forced feeding, etc., always prove to be beneficial. These general measures, executed under supervision with close attention to details, are infinitely safer and often times a great deal more efficacious than the administration of drugs.

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CHOLECYSTECTOMY VS. CHOLECYSTOSTOMY.*

(IN NON-MALIGNANT DISEASES OF THE GALL BLADDER.)

BY C. J. COMBS, M. D.,

OSHKOSH.

The subject of this paper was suggested as the result of the review of three-hundred cases of non-malignant disease of the gall-bladder and biliary tract, operated upon by the Surgical Staff of the Oshkosh Clinic at St. Mary's Hospital. One hundred consecutive cases were taken from each member of the Staff, Dr. F. G. Connell, Dr. Burton Clark and the writer. It was the idea of the writer that this would give a fairer basis for conclusions, as each surgeon recorded his own results. The writer has purposely avoided quotations from the results of others outside of our own Hospital as we wished to find out what was the best for ourselves from our own experiences.

It was interesting, however, to note how parallel the results were, the three giving a per-cent of eighty, eighty-one and eighty-two of satisfactory results in cholecystostomies. The difference in the immediate mortality in the total series was less than one-tenth of one per cent more in cholecystectomies than cholecystostomies. One of the surgeons had a lower mortality rate in cholecystectomies than cholecystostomies, while the other two showed the reverse. In this connection, it is to be noted that the lower mortality recorded in cholecystectomies occurred in the series of the surgeon who had done the largest proportion of cholecystectomies. The explanation for this is probably similar to the explanation of Deaver of how the mortality rate in his own experience was reversed, which is as follows:

"Formerly the mortality of cholecystectomy in my hands was distinctly larger than cholecystostomy. During the past year, the condition has reversed itself, the cases of simple drainage showing a larger percentage of deaths than when the gall-bladder was removed. This does not prove anything concerning the relative dangers of the two operations but comes simply from the fact that, formerly, I removed gall-bladders which showed extensive disease and drained those which were slightly involved, while lately, I have removed practically all gall-bladders whether the seat of mild or severe lesions and have drained chiefly those that have presented contra-indications to removal in the shape of severe local lesions with contra-indications to extensive procedure."[1]

In our series of cases, the immediate mortality in cholecystectomy was five per cent and cholecystostomy four and nine-tenths per cent. Practically the same, but as with Deaver's cases, this proves nothing, for the desperate cases such as acute hemorrhagic pancreatitis cholecystostomy was the operation of choice.

That cholecystectomy has a slightly higher mortality in parallel cases, has been conceded by all. Yet there is a class of cases that the writer believes will give a lower mortality, if cholecystectomy is performed, than cholecystostomy. These are acute cholecystitis with large thickened gall-bladders with few and recent adhesions, and can be removed with little if any opportunity for the escape of their contents, with or without drainage of the ducts. They are in gall-bladder surgery what the distended, unruptured appendix is to appendiceal surgery. The thickened, oedematous walls with partial thrombosis of the blood vessels and the contained infectious material are removed by cholecystectomy and no infected tissue remains to recover its usefulness or harbor later infection, and with less danger of spreading the infection than when the gall-bladder is opened as in cholecystostomy. We would of course, not apply this to those cases which have been allowed to remain unoperated until the walls are gangrenous and the infection has extended beyond the gall-bladder and the condition of the patient is precarious and unsuitable for the added shock of cholecystectomy.

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*Read before the State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920

Infective processes in the gall-bladder call for early operation just as emphatically as a like process does in the appendix. Much of the difficulty in gall-bladder surgery results from watchful waiting as it does in appendiceal surgery. The early cholecystectomy is easier and freer from danger than the late cholecystostomy. From a surgical standpoint, the gall-bladder is an appendage of the biliary tract in much the same way as the appendix is of the intestinal canal, and the laws governing the treatment of inflammatory condition of one may be applied to the other, as long as the inflammatory condition is largely confined to the gall-bladder.

When there is a cholangitis or obstruction to the common duct, we have problems to contend with that are vastly different. In cholangitis, a cholecystectomy with a choledochostomy, we believe, gives a better drainage of the ducts than can be obtained by cholecystostomy, and it is a fact that the gall-bladder in a large proportion of cases of non-malignant obstruction or damage of the common duct, is of little use for external drainage or cholecyst-enterostomy on account of contraction and obstruction of cystic duct. However, until the surgical repair and transplantation of the common duct is better developed and more uniformly successful than at present, it would probably be best for all, except the very elect, to retain the gall-bladder in obstructions of common duct that give evidence of permanency. It will at least act as a guide to future operations which is a point of no mean value, as we have had reason to know from experience.

A point that is well brought out in this series of cases is that the satisfactory results both of cholecystectomies and cholecystostomies in non-calcareous conditions are not so satisfactory as in the calcareous cases.

Our results are as follows: There were in the series one hundred nineteen cholecystectomies with one hundred three satisfactory results or eighty-six and six-tenths per cent. Of these, one hundred one were calcareous with ninety satisfactory results or a trifle less than ninety per cent. Eighteen were for non-calcareous conditions with thirteen satisfactory results or seventy-two per cent. This leaves a difference of eighteen per cent in favor of cholecystectomies for calcareous cases over non-calcareous cases.

With cholecystostomy, there were a total of one hundred eighty-one cases with one hundred forty-seven satisfactory or eighty-one and five-tenths per cent. Of these 146 were for calcareous conditions with 122 satisfactory results or 83.5 per cent. There were thirty-five of non-calcareous cases with twenty-five satisfactory results or seventy-one (plus) per cent. There being a difference of twelve per cent better results in the calcareous than non-calcareous.

This is quite a discrepancy in results both in cholecystectomy and cholecystostomy and we do not believe it can be explained in any other way than in an error in interpretation of the pathological condition of the tissues. In one of the writer's cases of cholcystectomy at operation, a diagnosis of strawberry gall-bladder was made. But before he left the hospital, there was another attack of abdominal pain located in the right hypochondriac region without jaundice. This case later proved to be the abdominal crisis of beginning tabes, although the Wassermann was negative before operation. It is humiliating to have such a mistake happen, but that they are not confined to our own series has been forced upon us by the large number of cases operated upon at other hospitals that we see with something like the following history. Had pain in right side of abdomen but was not confined to bed or did not have temperature, and some physician made a diagnosis of appendicitis and the appendix was removed. After this, they were well for three months to a year when the pain returned and the same or some other physician decided that there was a cholecystitis and the gall-bladder was removed or drained, but no stones found and they were told that they had an "inflamed gall-bladder," after which there was a period of relief, only to be followed by a return of the symptoms and their later condition is more pitiful than the first. Their symptoms have been explained as due to adhesions, etc. Not all of them, to be sure, or even a small percentage of them are syphilitic. Without a doubt, some are due to over-looked duodenal ulcers, others to stone, or other disease of the kidney, some to a colitis, and others, we have never, so far, been able to place. They have visited all the clinics and hospitals of the country without relief. The conclusion we draw from this is that every surgeon

should be very circumspect in his operations upon non-calcareous disease of the gall-bladder. One of these unrelieved neurasthenic individuals will do more to discredit gall-bladder surgery than a hundred good results. It is our opinion, that a gall-bladder that does not contain calculi, the color and thickness nearly normal, no adhesions and in which bile can be expressed through cystic duct, has as good a chance of recovery if not drained or removed. This covers many of the so-called catarrhal gall-bladders. We do not, of course, presume that the presence or absence of stones would in the least affect the good results in cholecystectomy or cholecystostomy for cholecystitis. But their presence is a pathological evidence that lessens the danger of a mistaken diagnosis of cholecystitis.

Mayo says with relation to cholecystitis without stones or jaundice as follows:

"Taking the strawberry gall-bladder as the type, the more variation from it toward the normal gall-bladder the less the prospect of cure following operation because of less certainty in the diagnosis. Our scientific conscience should not be satisfied by asserting, on slender evidence, that the cholecystitis exists if a diagnosis of gall-stones has been made and stones have not been found. 'The Wish may be Father to the Thought' and the condition should not be pronounced cholecystitis without such a diagnosis being verified by the pathologist and a grade of severity established which would make it a surgical disease. We all experience humiliation on failing to verify, at operation, a diagnosis of gall-stone disease, or cholecystitis. These failures should be classified and recorded in the hospital statistics as 'negative explorations of the gall-bladder.' In the present state of our knowledge these are justifiable mistakes."[2]

In comparing the ultimate result of cholecystectomies with cholecystostomies, we find that eighty-six and six-tenths per cent of all cholecystectomies were satisfactory as compared with eighty-one and five-tenths per cent of cholecystostomies, but if we compare only the calcareous cases, we find that ninety per cent of the cholecystectomies were satisfactory and eighty-three and five-tenths per cent of the cholecystostomies. In other words, of one hundred calcareous cases, six and one-half per cent more cholecystectomies will be satisfactory than cholecystostomies, while the immediate mortality is only one-tenth of one per cent greater. But it should be noted that about four per cent of the cholecystostomies required secondary cholecystectomy while less than one per cent of the cholecystectomies required secondary operation. So we have six and one-half per cent less of satisfactory results and four per cent requiring secondary operation and probably becoming cholecystectomies, as against a one-tenth per cent higher immediate mortality and one per cent requiring secondary operation in cholecystectomies.

Cholecystectomy certainly gives enough higher good results to demonstrate that it is more nearly ideal than cholecystostomy. And the writer can see no reason why the difference in immediate mortality cannot be lessened. Cholecystectomy is a comparatively new procedure as a routine method of treatment and when we see how the mortality of other surgical procedures have been lowered by experience, methods of technic and judgment when to apply, it would seem that even the small percentage now obtained may be lowered and may ultimately be as good as cholecystostomy.

In comparing the two methods, there is the added danger of shock, hemorrhage and injury to the common duct, duodenum, etc., in cholecystectomy. But in those cases which constitute the large majority of the total, the gall-bladder with its contained infective material and its diseased walls are removed in toto without exposing the surrounding tissues to the possible infection which must necessarily result when the gall-bladder cavity is opened, and the tissue remaining is not pathological, germ harboring atrium for further secondary infection. The latter reason applying to a great extent even when the common duct must be opened. In those cases where the common or hepatic duct requires attention, the cholecystectomy adds but little to the shock as compared to cholecystostomy and in our experience, really facilitates the ease of dealing with these conditions.

Cholecystectomy is technically more difficult in many cases. It is not a "show operation." Many of the dangers are being worked out. Many of these are due to anomalies in the blood vessels and ducts as has been so ably pointed out by Eisendrath.[3] We have not realized what a large number of these anomalies there were and, without doubt, a knowledge of them will prevent many accidents. It is another warning against

the unsurgical mass ligature and blind clamping of tissue if it can be avoided. It is at times very difficult to recognize and isolate the cystic duct and artery and cholecystectomy should not be undertaken where the condition is desperate. The surgeon who removes the gall-bladder in every case of cholecystitis and the one who performs cholecystostomy as a routine measure are not giving the patient the best service possible. The circumstances in every case should be considered, the condition of the patient, the technical difficulties and the surgeon's knowledge of his ability to deal with them, and the probability of a return of the gall-bladder to its normal condition should be considered. And while we believe that with the increase in experience that cholecystectomy will more and more replace cholecystostomy, we do not believe that cholecystostomy should be altogether discarded. Each surgeon will sooner or later make in his own mind a division of cases suitable to each procedure. This will of course be more or less flexible. Personally, the writer has classified his cases as follows: Cholecystectomy is the operation of choice in all cases of cholecystitis except, 1, the desperately ill, as acute hemorrhagic pancreatitis or when the technical difficulties on account of old inflammatory condition are great. These will vary with the experience of the operator. 2. In mild cholecystitis in comparatively young people where stones are present but the walls of the gall-bladder show macroscopically little disease. Cholecystostomy in these cases has been very satisfactory but they are not frequent.

CONCLUSION.

1. Cholecystectomy is the operation of choice in the majority of cases of cholecystitis, giving a slightly higher immediate mortality with a considerable higher percentage of satisfactory results and a smaller percentage of secondary operation than cholecystostomy.

2. That cholecystostomy gives good results in a large majority of cases and would be the method of choice in those cases where the gall-bladder is capable of regaining its normal healthy condition, but it is often impossible to know which are capable of this.

3. Cholecystostomy is the method of choice in the desperate cases as a life-saving measure.

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SPECIAL POINTS IN THE SURGERY OF GALL-BLADDER AND DUCTS.*

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1. RELATION OF THE LIVER TO GALL-BLADDER SURGERY.

If one were to base his opinion concerning the function of the liver entirely on textbooks on physiology, one might conclude that life could continue after the removal of the liver. It is well known, however, that an animal will live from two to eight hours only after the removal of the liver. It would appear, therefore, that the real function of the liver is still to be defined, and that in gall-bladder surgery, and in surgery of the common duct we are to a certain extent dealing with the unknown. All surgeons are familiar with the so-called "liver shock" which sometimes supervenes after operation on the gall-bladder. The patient goes through the operation satisfactorily and recovers from the anesthesia. Blood pressure examinations and general physical examinations of the patient give no adverse indication. At the end of the first day, apparently all is well, but the night is not so satisfactory. On the following day the patient is restless, perhaps has nausea; he loses interest in his surroundings, refuses food, the tongue is dry and coated, a period of steadily increasing depression develops; in three, four or five days the patient is dead. Autopsy does not reveal the cause of death.

In considering this peculiar danger in gall-bladder surgery, it became evident that researches should be directed to this particular problem; i. e., to determine what functions may be possessed by the liver in addition to those described in the textbooks. To this end, in our laboratory we inaugurated a series of experiments. While our re-

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sults thus far do not justify any final conclusions, yet we have made certain observations of interest which suggest at least that we may be on the right road to knowledge which will aid us in controlling the destiny of our patients.

Some years ago in association with Dr. J. B. Austin, who is a very able cytologist, many observations were made upon the changes present in exhaustion in the cells of the various organs and tissues of the body. We found changes in only the brain, the liver, and the adrenals; and that in these organs the changes appeared irrespective of the cause of exhaustion. We found also that the changes in the brain and the liver were so uniformly present as to make it appear that these organs played an interdependent role in activity and exhaustion. We then sought to determine the nature and extent of this interdependence, and to discover which, if either, was the more dependent upon the other. We found that after the liver was removed the brain cells disintegrated very rapidly—within an hour or less; that after the excision of the liver, the injection of adrenalin did not cause a phase of hyperchromatism of the brain cells as was the case in intact animals; and that the disintegration of the brain cells following excision of the liver could not be distinguished from disintegration of the brain-cells due to any other cause. On the other hand, the liver cells showed no disintegration in animals kept alive by artificial respiration after decapitation. These findings showed that some vital relationship exists between the brain and the liver so that the brain cannot survive without the liver. As far as our researches have disclosed, no other organ is so sensitive as the brain to the loss of the liver. This earlier research, however, offered no suggestion as to the explanation of this relationship between the brain and the liver.

It then occurred to me that perhaps the clue to this problem, as well as to certain other interrelationships within the organism, might be found in the application to the organism of the laws established by scientists in other fields. Lillie, Loeb, and other physical chemists have found that whenever cells have had brought to them the impetus to increased work, as for example in cell division, the permeability of their surrounding membrane is increased.

Osterhaut has offered experimental evidence that variations in the permeability of plant cells are equivalent to variations in their electric conductivity. Following these leads, we then based our researches upon the hypothesis advanced in *Man, an Adaptive Mechanism,* i. e., that men and animals are in effect electrochemical mechanisms, operating under the laws of physics. Accordingly we made experiments to determine whether or not the electric conductivity of the various organs and tissues of the body, those in the brain and the liver paralleling the cytologic changes observed in our earlier research. For example, we found that a single dose of adrenalin, sufficiently large to produce clinical evidences of increased brain activity, increased the electric conductivity of the brain, and that this increased conductivity corresponded to the hyperchromatism of the brain cells produced by an equal dose of adrenalin. So also, repeated doses of adrenalin, which clinically produce fatigue, cause decreased conductivity of the brain and chromatolysis of the brain cells. Of special significance, moreover, as regards our investigation of the interrelation of the brain and the liver, was our finding that the conductivity changes in the liver were the antithesis of those in the brain; that is, after a single dose of adrenalin, the conductivity of the brain was *increased,* and the conductivity of the liver was *decreased.* After repeated doses of adrenalin, producing exhaustion, the conductivity of the brain was *decreased* and the conductivity of the liver was *increased.* A large series of observations of the conductivity of the brain and of the liver in conditions of stimulation and of exhaustion from many different causes established this antithetic relationship.

In these studies of electric conductivity as in our cytologic studies, it was necessary to kill the animal before the observations could be made, so that although the condition of the cells at the moment of death could be determined, the progress of the changes during life could not be determined. It occurred to me that since variations in function are almost invariably accompanied by variations in temperature, valuable data might be secured by measuring the changes in temperature of the brain and liver and in other organs during life by means of the thermocouple. To this end special thermocouples were devised, so sensitive as to make possible the measurement of temperature variations within one one-thousandth of a degree. Here again our findings were in accord with those in the cytologic as well as conductivity researches.

We verified the fact established by other observers —that each organ has its own range of temperature. As our especial interest was in the brain and the liver, our observations thus far in this research, which is still in the initial stage, have been in the main confined to observations of the temperature changes in these organs under conditions which, with one important exception, were identical with those in the preceding researches—the exception being that in this research, our observations were made upon the *living animal.* We have found that every change in the condition of the animal, however produced, is accompanied by a change in the temperature of the brain. This change we may consider is the effect upon the brain of the temperature conditions in all the organs of the body combined, just as the temperature of a room is the resultant of the factors that add heat and the factors that subtract heat; e. g., the combination of the temperature of each and every person in the room with that of each and every object in the room. The resultant of these combined temperatures, however, is ultimately determined by the object with the highest temperature—the stove or the furnace in the winter time; the hot, sun-lighted air in the summer. In the normal animal organism, the liver appears to have the highest temperature. Therefore, when the temperature of the brain rises or falls under varying conditions, we may naturally consider first of all the influence of the liver. In support of this relationship, we found that after complete ligation of the liver, the temperature of the brain began to fall immediately and continued to fall until the death of the animal. This added final confirmatory evidence in support of the conclusion from our previous researches that, without the liver, the brain cannot function.

It then occurred to me that this essential dependence of the brain upon the liver might explain the so-called "liver-shock" after gall-bladder operations. We, therefore, studied the effect upon the temperature of the brain and the liver of the various factors attending surgical operations. As one would expect, the effect of low blood pressure as the result of hemorrhage is a progressive lowering of the temperature of the liver and the brain. Ether anesthesia progressively lowers the temperature of the brain, the temperature curve corresponding closely to that following the ligation of the liver excepting during the initial stage—the period of excitement—when the temperature rises. It is certainly a very interesting fact (although we are not yet in a position to draw any inference from that fact) that the length of life after excision of the liver is almost identical with the length of time that an animal can live under ether anesthesia.

Is ether anesthesia the equivalent of the complete suspension of liver function? We found that surgical trauma, manipulation of viscera—any of the maneuvers which are incident to a surgical operation—produced changes in the brain temperature, tending to a progressive lowering in proportion to the extent, severity and protraction of the stimulus. Exposure of the viscera, alone, produced a progressive fall in the temperature of the brain, comparable to that following the excision of the liver. In view of these observations, it seemed as though it might be possible that the reason why a man or an animal can live for but a limited period of time under complete ether anesthesia may be that, among other effects of the anesthetic, the function of the liver is completely inhibited. The explanation of the way in which ether anesthesia is produced is in accord with this supposition. It is known that ether increases the resistance of the cell membranes—diminishes their permeability. That is, the power of the cells to be stimulated, to act, to promote vital processes is diminished. Interchange between the plasma and the gases is interfered with; the cells cannot receive oxygen; and asphyxia may result. In short, the cells may be asphyxiated. Hour temperature, electric conductivity, and cytologic observations as well as the clinical course of events indicate that when the liver is excised, the function of the brain-cells is largely suspended.

We next extended our observations to include certain protective measures. We found that under light nitrous-oxid-oxygen anesthesia—analgesia, the temperature of the brain remained practically unchanged. Under deeper anesthesia with gas-oxygen, the temperature of the brain fell, but not as rapidly as under ether anesthesia. The introduction of hot water by the mouth, the application of hot packs, the elevation of the feet produced an immediate response in an increased temperature in the brain, thus throwing new light upon the therapeutic value of these agents.

All this may seem a very far-fetched line of evidence in connection with surgery of the gall-

bladder and ducts. What is the practical application?

First of all, these studies appear to indicate that in "liver-shock" the internal respiration of the liver cells has been interfered with to an extent which as effectively prevents its functioning as if the liver had been ligated. Why is "liver-shock" peculiar to gall-bladder operations? In the patient with deep jaundice, who has suffered a period of nausea with consequent loss of nutrition and of water equilibrium the internal respiration of the cells—of the liver in particular—has become impaired and in addition the function of the liver is quite certainly interfered with by the back-pressure of the bile. If, owing to infection, to diminished nutrition, to want of water, to lowered blood pressure, to the back-pressure of bile, the internal respiration of the liver has been reduced ten, twenty, forty, sixty, or eighty per cent at the time of operation, to that extent will the brain have been compromised and by so much will the power of the liver to function in the presence of the deleterious factors of the operation have been reduced. If the internal respiration of the liver cells has been reduced by forty per cent and the patient is placed under full ether anesthesia, which of itself alone will reduce the internal respiration in a like degree, then the remaining twenty per cent of functioning power can hardly suffice to carry the patient through. Moreover, in addition to the anesthetic, the trauma of the operation, the cooling of the viscera and perhaps hemorrhage will add their quota so that a one hundred per cent loss of liver function is all too readily reached.

It follows then that surgical measures, as indicated by the findings in our conductivity and temperature studies, should be directed primarily to the restoration of the already impaired internal respiration of the liver cells and to the prevention of further damage.

As our experiments have shown an unaltered brain temperature under nitrous-oxid-oxygen analgesia as opposed to a continuous fall to the death point under full surgical anesthesia, analgesia only is employed if possible, and if deeper anesthesia is required at any stage in the operation, it is secured by the same anesthetic, since, as we have stated above, the fall in the brain temperature under full nitrous-oxid-oxygen anesthesia is very slow and gradual as compared with the rapid fall under ether anesthesia.

Infiltration of the surgical area with a local anesthetic is employed to protect the brain from the immediate alterations caused by trauma; and the amount of trauma is diminished by making the incision sufficiently large to provide a clear view of the entire field of operation. Warm pads are used to prevent cooling of the viscera. The liver itself is handled as little as possible. When the wound is closed, care is taken not to tie the stitches too tightly, thus obviating needless pain. The wound should receive the lasting protection of blocking by means of quinine and urea hydrochlorid. Heat is immediately applied to the entire abdomen, following the indication in our experiments in which the application of hot pads or the introduction of hot water into the stomach produced an immediate increase in the temperature of both the liver and the brain. It is of interest to note that in several instances the increase in the temperature of the brain occurred first.

A sufficient blood supply is an absolute essential to the maintenance of the internal respiration of the cells. Therefore, if the blood pressure is low, if the patient has secondary anemia, as a result of his long illness, a transfusion of blood should be given at the time of operation, followed if necessary by another transfusion on the following day, and by still added transfusions as indicated later.

The internal respiration of the cells cannot be maintained without water, and especially large amounts are needed by these patients because of the abnormally large amounts of waste by-products to be eliminated. Water is, therefore, urged by the mouth, by rectum, and when necessary, by hypodermoclysis—by any and every route that will ensure the reception of a sufficient amount to restore and maintain the normal water equilibrium —usually from 3000 to 4000 c.c. daily.

These factors in the surgery of the gall-bladder and the ducts are not new; but the manner of their application differs from what we have done before in one prime particular; heretofore we waited until the indication arose before making use of many of the protective measures we have noted above. Now, with the clearer understanding gained from our later studies, we anticipate the need of the patient. We know, by the application of physical measurements which give as accurate

results as those secured by the use of the yard-stick and the pound, just what the factors of the operation will do to the patient; we know to some extent at least the condition of the patient's resources. We, therefore, carry our attack into the camp of the enemy rather than wait to be attacked. Other experiments and other observations, especially our experience in the war, have shown that, whenever a patient is reduced to the point where a crisis is expected, if the crisis is waited for before action is taken, the patient may be lost, in all probability will be lost. Whereas, if instead of limiting ourselves to a counter-offensive we make a surprise attack, the crisis does not supervene for the enemy flees without attacking. In brief, it is better to supply even a patient who may not require it with every available means of protection than to take a chance that a patient who may require it may lose out for the lack of any one factor which may protect him. Protection and treatment are based on the indication of the table of probabilities, not on the indication of the individual patient. We should not lose the patient while deciding upon the indications to prevent his loss.

As for the practical value of the application of the principle which laboratory research and clinical experience appear to have established—the essential relationship of the brain and the liver and the consequent vital need of protecting and augmenting the internal respiration of the cells of the liver—we can only say that while we are not satisfied as yet with our results, while we realize that thus far the studies we have quoted are suggestive rather than conclusive, nevertheless whatever fundamental law underlies the action of the measures we have indicated, by their application we have diminished the mortality rate of operations on the gall-bladder and ducts from 6.2 per cent to 1.6 per cent.

2. DIAGNOSIS.

Everyone agrees that it is not always possible to diagnose a lesion of the gall-bladder. In exploratory operations gall-stones are sometimes found unexpectedly; and again, having opened the abdomen for the purpose of removing gall-stones we find that the symptoms are due to some other cause. This does not happen frequently, but a few such mistakes amount to many in their impression upon the operator and the patient. As one measure whereby to add certainty to the diagnosis we have been using Meltzer's magnesium sulphate test as reported by B. B. V. Lyon, M. D. in the Jour. A. M. A. Sept. 15, 1919. In the application of this method we have found that certain characteristics of the gastric and duodenal contents are fairly constantly present in gall-bladder disease.

(1) In many cases of cholelithiasis the gastric fluid in most cases is bile stained. When the fluid is clear, it does not mean, however, that gall-bladder disease does not exist, and more than half of the cases of cholelithiasis have a mild or moderate hyperacidity. The duodenal contents normally are clear and faintly bile tinged. A cloudy fluid from the duodenum means nothing if it is intermittently cloudy or acid, or if upon microscopical examination it is found to contain stomach elements. In other words, one must be sure that the collected fluid is true duodenal content and not fluid from the stomach which has just spurted through the pylorus. When the duodenal fluid is constantly cloudy and alkaline, and contains no pus cells, then inflammation of the duodenum or biliary tract is to be suspected.

(2) Of the first bile which is collected after injection of the sulphate solution, i. e., "common-duct bile," little can be said. Since starting this series we have had two cases of total obstruction of the ductus chloledochus. In these we found only duodenal and stomach contents. In one case when the duodenal contents were cloudy and contained pus the bile which followed injection of the magnesium sulphate was clear and contained only a few cells. We believed in this case that we were dealing with a catarrhal jaundice with no involvement of the biliary tract, and the clinical picture strengthened this belief.

(3) When the "gall-bladder phase" is absent, we have concluded that the cystic duct is obstructed by adhesions, by stone, or that the gall-bladder is hampered by adhesions. In cholelithiasis when the cystic duct is patent, the bile from the gall-bladder is often more viscid and occasionally is cloudy and contains pus cells. A cloudiness due to precipitated bile salts often occurs in normal bile when it has stood for some time. The color of the bile from the gall-bladder varies from almost black to a light brown, but is usually darker than the bile from the common or hepatic ducts. We have noted nothing peculiar in

the color of bile from pathological gall-bladders. Usually the bile from the normal gall-bladder is prompt in making its appearance, coming in from two to six minutes after the injection of the magnesium sulphate solution. A greatly retarded appearance of the "gall-bladder phase" occurred in two cases in which gall-stones were found at the operation. Occasionally, too, we find an unusually small amount (10 to 30 c.c.) of gall-bladder bile in cholelithiasis.

(4) Thus far the hepatic bile has served us only as a means of contrast with that from the gall-bladder.

In eight cases we have made the diagnosis of obstruction of the cystic duct previous to operation by the magnesium sulphate test. These eight cases all showed an obstruction of the cystic duct at the time of operation. In one case in which it was not necessary to remove the gall-bladder, we had the test repeated and secured a "three-phase test" following the operation, while before the operation we had been able to obtain only a "two-phase test," the "gall-bladder phase" being absent.

From our experience to date, therefore, we feel that this test is well worth while, and that it does give us additional evidence of the pathology of the gall-bladder.

If the gall-bladder is full of stones, no gall-bladder bile will appear, although other indications also may prevent the delivery of bile from the gall-bladder. If the ducts are free and there is an infection in the gall-bladder, evidence of the infection will appear in the gall-bladder bile. Thus this test provides a valuable clue to the presence of chronic cholecystitis.

Of the 93 cases in which this test has been applied, we have operated on 33, and 30 have verified the findings. In one case in which we drained a gall-bladder which had contained a number of stones, repeated tests made after the fistula had healed showed the presence of gall-bladder bile which had been absent before the operation.

While this is a new test, and in many cases may not provide final evidence, nevertheless we are satisfied that it adds a valuable source of information in the diagnosis of gall-stones.

3. *Cholecystectomy vs. Cholecystostomy.* The case referred to above in which the gall-bladder was drained rather than removed suggests a brief discussion of the question as to whether the gall-bladder should be removed or drained.

A study from case histories and our experience that too often gall-bladders which had been drained gave later trouble which necessitated their removal has made us adopt the following general rules:

The gall-bladder is removed in the following conditions:

a. If there has been an acute cholecystitis.

b. If there is a stone in the cystic duct at the time of operation.

c. If the cystic duct is hard and thickened from the former presence of a stone.

d. If the gall-bladder wall is thickened.

The gall-bladder is not removed if the patient has never had acute cholecystitis and the gall-bladder presents a normal appearance.

The question may be raised: Why leave the gall-bladder in any case, since good health is possible without it? Experience has shown that after the removal of the gall-bladder, or if it has failed to function for a considerable time because filled with stones, the common duct will often become dilated. Judd of the Mayo Clinic has shown that the common duct to some extent compensates for the gall-bladder by storing bile.

Just as soon as the common duct begins to store bile it is subject to the same tendency to the formation of stones as existed in the gall-bladder. It would seem far better to take a remote chance of future recurrence of trouble in the gall-bladder than a considerable chance of the occurrence of common duct stones. Everyone knows how difficult is a repeated operation upon the common duct after the removal of the gall-bladder, especially if there are many adhesions. In addition to the possibility of the occurrence of stones in the common duct, there is the probability of injury to the common duct in the process of removing the gall-bladder. It is common experience that with the increased number of cholecystectomies, more patients are presenting themselves for operation on account of the divided common duct.

Cholecystectomy is the operation of choice under the conditions cited above, but it is an operation which is fraught with difficulty and carries with it a certain degree of hazard.

By the practical application of our conception of the relation of the liver to gall-bladder surgery as explained in our first section, and by use of the points in operative technique noted above, we have reduced our mortality rate from 6.2% to 1.6%.

THE NEED OF MATERNITY SERVICE IN RURAL DISTRICTS.*

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A good obstetrician is as essential to any community as is a good internist or surgeon. In a rural community the physician must at least have the qualifications of the first two mentioned in order to give such service as is expected from him.

Few physicians practicing in a city realize what a physician located in a rural community has to contend with: Hospital facilities are usually meager or a long ways off; consultation by anyone but a general practitioner is often next to impossible; nurses are available usually after 24 or 48 hours, and in the winter months a nurse often cannot be secured for the country home, while in the busy seasons of the year even general help for housework cannot be procured; often the roads are almost impassable so that it takes hours to do the work which ordinarily should be done in only a short length of time. Notwithstanding the above handicaps we do our best to give our patients as nearly the proper service they should have as is possible.

Formerly it was thought by many people that anyone could care for a confinement case. No attention was paid to the woman until she was in labor and after that was over she was again left entirely to the care of nature. This was brought about by the fact that formerly a physician could not always be obtained when needed, and, hence, the midwife came to take the physician's place at those times. In years gone by many of the midwives were about as well qualified as the average physician; neither knew anything about sepsis, asepsis or antisepsis and, therefore, the one who interfered most during labor was the more dangerous. Those days, however, are past and both the physician and people know that the lives of far too many mothers, as well as babies, are sacrificed. If all cases were normal from the outset of pregnancy and through the puerperium, our present obstetrical care would be sufficient. More and more do we see the importance of the prenatal care of the child. Since the fact that the proper care of the mother has its influences on the child is accepted without question, careful attention must be given to the function of the kidneys. In case of toxaemia, besides attention to the kidneys, foci of infection must be looked for and removed.

If the woman is a primipara, the size and shape of the pelvic inlet and outlet should be ascertained; if contracted or malformed, the physician should at that time decide whether a premature labor should be induced or whether a cesarean section must be performed when labor starts or at the termination of pregnancy. It is much to our discredit and to the danger of the life of mother and child if this is neglected and the parturient allowed to go to the normal time and the chance taken that labor might go on normally; or, if as a last resort, the patient is rushed off to some hospital where a skilled obstetrician will have to resort to some drastic measure after labor is on, the woman fatigued, and the probability of infection greatly increased.

Each knowing how a normal pregnancy and labor progresses and is terminated, let us briefly sum up some of the pathological conditions, first, during pregnancy, second, during labor, and, finally, during the puerperium:

The toxaemias of pregnancy are the more common complications. Pernicious vomiting, usually occurring during the second or third months, may be reflex, of nervous origin, and the more severe and more often fatal cases, toxic in origin. The milder cases often respond to suggestive and dietetic treatment by the use of certain drugs, or removal of some local cause, such as correction of a retroversion, etc. At times rectal feeding must be resorted to. Never should a woman be allowed to reach the stage at which time an abortion is too late to prevent death.

Nephritis and eclampsia must always be guarded against. I believe that in every case developing a nephritis, which does not respond to treatment, abortion or a premature labor should be induced as the nephritis then usually clears up in a short time.

Placenta praevia is usually detected by painless hemorrhages during the last few months of pregnancy. Here we have a very dangerous complication and delivery should be induced at once unless the patient is in a hospital where she can be kept in bed, be under constant observation, and the hemorrhage very slight or the child not viable but very nearly so.

In abruptia placenta, premature separation of

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placenta, we commonly have a history of injury and the parturient complains of pain, the uterus enlarges until the blood flows externally, and soon the patient becomes anaemic and shows marked evidence of shock. When the placenta becomes detached during labor before dilatation is complete, manual dilatation with version or forceps should be done. Should the cervix be tightly closed we have a formidable condition indeed. Vaginal or abdominal cesarean section must often be resorted to.

As a result of labor the following conditions may arise:

1. Lacerations to some degree in a primipara are practically always present, especially when forceps are used. Many severe lacerations could be avoided by doing an episiotomy as this is readily repaired. I, personally, always do so when it is evident there will be a laceration. Lacerations of first and second degree can easily be repaired as soon as the placenta is delivered. Those of the third degree are much more difficult and one must have plenty of assistance to repair the same at the time of delivery; if assistance is not available then, it should be repaired at a later time.

2. Lacerations of the cervix are common, especially if delivery is fairly rapid.

3. Ruptured uterus, injured bladder and rectum must be watched for and guarded against.

Postpartum hemorrhage usually occurs within the first twenty-four hours after delivery. If it starts after that it is usually due to a retained piece of placenta.

The causes of hemorrhage are laceration of cervix, vagina or fundus, and, if bleeding continues or is profuse, these must be repaired at once. Lack of contraction of uterus, which is probably the most common cause of hemorrhage, is usually controlled by massage of uterus or by stimulating contraction with ergot or pituitrin, but in some cases it is necessary to resort to packing. Normally, a woman loses from four to eight ounces of blood, but even the loss of one quart does not produce any symptom in the ordinary case. When dizziness, faintness, yawning or nausea occurs, one must be on the alert as these symptoms indicate considerable loss of blood.

Fully fifty per cent of the women who die as a result of pregnancy die from some form of puerperal infection. Since the infection is practically always carried into the vagina during delivery, there is no question but what the physician is responsible for most of these deaths. A small percentage of cases are undoubtedly endogenous; also, some are infected before delivery or later by improper care during the puerperium. Naturally any organism may be the infective organism. The predisposing causes are lowered resistance as a result of pregnancy, frequent vaginal examinations (rectal examinations usually being sufficient after some training), prolonged labor, retained blood clots, lacerations and retained pieces of placenta or membranes. Every case of labor should be treated for septicemia by careful asepsis before she is delivered.

Statistics show that at least 10,000 mothers die in the United States annually from all the complications of pregnancy. The average number of births in the State of Wisconsin over a period of four years is 59,231 annually.

For the sake of comparison we will divide the State into three groups:

First, cities with population of 10,000 or over. This State has twenty such cities.

Second, the counties in which these cities are located.

Third, all the other counties in the State.

	Births	Deaths under 1 day	Rate of deaths under 1 day per 10,000 births	Deaths under 1 year	Rate of deaths under 1 year per 10,000 births
Cities of 10,000 or over	22,295	372	16.6	2080	92.4
Rural portions of counties containing cities of 10,000 or more	10,962	183	16.6	997	90.8
Rural counties	25,740	454	17.6	1929	74.8

	Average Births Per Year	Average Maternal Deaths	Death Rate Per 1,000
Cities of 10,000 or over and counties containing those cities	33,480	185	5.52
Rural counties	25,740	152	5.92

From the above statistics we find that mothers' mortality is as great in the cities as it is in the country; mortality of infants under one day is slightly greater in the country, while the mortality of infants under one year is considerably less in the rural communities than in the cities. Thus it would seem that there is need of some obstetrical improvements in the cities as well as in the rural districts. Just what our special needs in the rural communities are is difficult to determine.

Maternity instruction should be instituted in some manner. It would be very difficult to have a clinic or a school of instruction for expectant mothers since the families are so widely scattered as to make it practically impossible at the present time to have them take advantage of such a clinic. Furthermore, many would not go because their particular physician would not be the man whom they could see; others would not go because everyone is known by everyone else in that particular community, and most women prefer to stay at home rather than be seen going to such an institution as they feel then that everyone knows their condition, and, for the most part, women are still sensitive on that point.

How can we instruct the largest number of women who are to be future mothers what a great responsibility they are undertaking? Many girls are married who do not have the least conception of what married life means to them. Many illegitimate children would not be born if the girls had a correct idea of sexual knowledge.

The problem then is a big problem and one quite difficult of solution. The best plan, however, would be, I think, to have the work carried on by some local organization, aided and supervised by the state. This organization should have some attractive and comfortable place where meetings could be held and matters of vital interest to the expectant mothers, women and older girls discussed. A well qualified nurse, one with the ability of making friends with the women of the community, should be here on certain days, perhaps even have regular office hours, and give such talks as would give every woman the knowledge that she needs. This nurse should advise each pregnant woman to see her physician early in pregnancy, should impress upon her the importance of urine examinations, and give such advice as will help her keep herself in the best possible physical and mental condition. Naturally, great care must be exercised that the woman will feel that if she follows the advice given that she can have every confidence that things will be just as they should. Instructions concerning what will be required in time of confinement should be given, and, should there be a family that cannot afford to have what is needed, it should be taken care of.

Connected with this it would be well to have a child welfare station where mothers could receive just general advice, such as children's nutrition, etc. Should a physician's advice or care be required, the people should be advised to call their *own* physician.

A great deal of good might be accomplished by having pamphlets with general information sent to each family throughout the state, and in trying to educate the public just as much as possible. At the present time much money and ability is spent for the betterment of animals, grains and soil but as yet the health of the community seems to be a matter of minor importance to the farmer.

The time must come when our country roads are such that they can be used all year round. In the winter months they should be kept open. At that time it is a physical impossibility to care for patients as they should be cared for. The physician simply cannot be everywhere he is needed and, furthermore, the difficulty in traveling consumes much of the energy which he needs in caring for his patients. Until we get hard roads, making travel in the spring of the year possible, the people cannot expect the physician to come day or night, regardless of weather, since he, too, is only human and needs to look out for his own welfare as well as others.

The remedy which will do more to improve our maternity service than any other thing would seem to be a better understanding of the art of obstetrics by the physicians. The field of obstetrics should be made more attractive, especially from a financial standpoint. Every medical school devotes more time to clinics in major surgery than to clinics in that one branch of medicine which all the men will have to practice regardless of where they locate. No man will go out and do major surgery without first training especially for that work, and yet most men go out and take care of obstetrical cases, which often are as serious as an abdominal operation. Naturally much time must be spent on many of the obstetrical cases and there is no reason why the obstetrician should not be able to demand at least a reasonable amount for the time and work he gives to these cases.

There should be one man who is especially well trained in this work in every community so that the man who devotes less time to this work will have an opportunity to get skilled help when he needs it. However, until obstetrics is a better paid field, it is always going to be shy these well

trained and skilled men. It is impossible to specialize in many branches of medicine, but as certainly as the well trained obstetrician is needed in the cities, so we also need them in the rural communities.

Then, when we can have the people educated to where they realize how much depends on good obstetrics and we as physicians bring the plane of obstetrical work on a level with the other specialties, we will save many of those mothers and children who should remain among the living but are not given every chance they should have.

DENTAL CONDITIONS RELATIVE TO SYSTEMIC FINDINGS.*

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The necessity of a close spirit of co-operation between the physician and dentist is now accepted as a fact by the laity as well as the medical and dental professions. Many physicians and dentists have been slow to realize this, and as a result, they are losing the confidence and respect of their patients in addition to that of the other members of both professions. The east has fallen far behind the west in this regard but the more scientific men of the east are now rapidly taking up the idea.

While, among other infective foci, the teeth have long been looked upon as a possible source of infection, it was not until the development of the X-ray that their true relation to bodily infection was established. It is true that cultures were frequently made from the contents of sacs about abcessed teeth and a definite source of infection established, yet, the fact remains, that many teeth which served as definite infection, were not suspected before the advent of the X-ray. The work on non-vital tooth-structure was not generally frowned upon until the X-ray demonstrated the frequent subsequent development of granulomata.

In addition to the routine examination of the teeth which is made to locate the presence of irregular conditions not expected to show in the X-ray shadows, an inspection should be made of the entire mouth to determine the presence or absence of other pathological conditions such as carcinoma or syphilis.

In a practice of more than twenty years, the writer finds that a number of these years passed without findings of this sort being referred to the patient's physician, or were entirely overlooked. While we may not be able to recognize the conditions as such, it would seem wise to at least apprise the physician of our suspicions. This is a very essential phase of the co-operation and is obtained in a group where the dental branch of medicine is represented and should obtain in private practices, in order to assist in curbing the progress of these two diseases. It would seem that more substantial progress is coming when the dental profession devotes more time to that phase of practice which treats with pathology, besides malignant growths, a thorough knowledge of the staphylococci and streptococci.

Further, a part of the routine in the dental examinations is the full mouth radiogram. The reason for a full-mouth radiogram is the possibility of comparing the sides of either jaw, permitting a more definite diagnosis and revealing unsuspected conditions such as unerupted or impacted teeth, or both; supernumerary teeth, etc. Edentulous jaws often afford such conditions as well as the periapical abcesses, and should be radiographed as well as those containing teeth.

Of 100 consecutive patients examined at the Jackson Clinic and referred to the dental section, each showed some dental sepsis. Out of another 100 consecutive patients, twenty-three were referred to the dental section. Twenty-one of these showed dental sepsis. The slides will show the X-ray findings of some of these cases.

Many diseases can be assumed to originate from dental infection, but it is proof beyond doubt that such foci are the causative factors, when injection into animals of freshly isolated strains from periapical abcesses is followed by localization and lesion in organs corresponding to those involved in the patients from whom the bacterium was isolated.

Rosenow ([1]) has demonstrated the elective localizing power of the freshly isolated streptococci found in foci or in systemic lesions in many diseases. He found that lesion of the spinal cord occurred in 58% of 31 animals injected with the

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bacteria from the tonsils or infected teeth in 3 cases of multiple sclerosis.

Lesions of the meninges and spinal cord were produced in 66% of 21 animals injected with bacteria as isolated from pyorrheal pockets and tonsils in a case of transverse myelitis. Following the injection of streptococci from a case of brachial intercostal and post herpetic neuralgia in 83% of 18 animals, lesions occurred in or about one or more of the posterior roots of the spinal cord.

Involvement of the peripheral nerves was produced in 75% of 19 animals injected with the pneumococcus obtained on two occasions from multiple neuritis. Interesting is his case of myositis and dental neuritis. Streptococci isolated from the dead pulp of a tooth and excised muscle from the neck, when injected into animals produced myositis in 71% of the 24 animals, dental pulpitis in 50% and neuritis chiefly of the dental nerves in 46%.

Elective localizing power of streptococci has been demonstrated in other diseases as, appendicitis, cholecystitis, ulcer of the stomach, rheumatic fever, erythema-nodosum, chronic septic endocarditis and acute anterior poliomyelitis.

Bumpus ([2]) and Meisser in an unpublished work have demonstrated the relationship between kidney infection and infection in the teeth and tonsils. Isolated strains from periapical abcesses and diseased tonsils in patients with kidney infections, when injected into rabbits produced lesion of the kidney in a large majority of instances.

Although infection is not the etiological agent in diabetes mellitus, it does play an important role at times in the progress of the disease.

That infection reduces the sugar tolerance in a diabetic has been clearly demonstrated. Following the removal of foci of infection, such patients are able to take much larger quantities of carbohydrates without sugar appearing in the urine.

It is a frequent and striking observation that patients with pernicious anemia have a very marked degree of oral sepsis, while the disease has not been definitely shown to be due to an infection, nor does a cure result from the removal of foci of infection, improvement frequently occurs when such foci are eradicated. It is well to bear one point in mind as Rosenow ([3]) has shown; and that is, that dental infections are often metastatic from foci elsewhere than in the dental area. That this may happen is shown by the fact that it occurs in sound teeth, that apical abcesses are sometimes found at the roots of otherwise sound teeth whose pulp-chambers have not been perforated by treatment or decay, and that infection is occasionally found in unerupted teeth. Experimental evidence that this may occur has been obtained.

All cases presenting at a clinic are not referred to the dental section, but I think they should be, for this reason; inasmuch as all pus is septic and should be removed to avoid if not to eradicate a focus of infection, it has proven necessary to include the mouth and teeth in the examination of the patient.

If this is not done we are liable to have overlooked in that particular case the only clew as to the causative factor in the complaint, the patient is dismissed without a definite diagnosis and later returns with advanced symptoms. In these cases, the diagnostician is consulted as to the advisability of doing the dental work then or at a subsequent visit, allowing the patient time to gain a higher rate of resistance.

But, when there is a sac to be removed, it should be done, and not content ourselves with the removal of the tooth or root only, leaving the sac contents to be eliminated through the blood stream. The physician and dentist who cooperate in this manner are giving the case at hand the best possible attention. With the blocking of the nerve trunk we are able to take the time to follow out the technique given below wherein we are able to remove the sac as well as the tooth.

Sometimes chronic root end infections are present where blood findings are normal; naturally periods occur when the effect of pathogenic bacteria and toxins are slight. But, since secondary infections could occur during this period, a focal infection, though producing no characteristic blood change must always be looked upon as a menace to the health of the patient. Logan ([4]) says: "I would like the co-operation of those especially interested in determining whether the systemic reaction is greater or less after removal of these teeth and curetment, or removed and not curetted, or in case we wait a few days for curetment."

After the blocking is done for the alveolectomy or surgical removal of a tooth, which is done un-

der ASEPTIC surroundings and conditions, a curved incision is made from the gingival margin in the direction of and over the root of the tooth anterior to field of operation and through the mucous membrane and periosteum. This flap of soft tissue is then dissected away and sutured at the corner to the cheek or lip. This serves the purpose of a retractor and does not misuse the flap when the finger presses the cheek away. The blood is controlled by gauze sponges. With the Gardner chisels the buccal plate of alveolus is removed the length of the roots and for the distance anterio-distally to their greatest thickness; the tooth is usually turned out of the socket with little resistance. Socket is now in good view and may be curetted if advisable with Bogle Curettes. The septa and sharp edges of remaining alveolar process is trimmed and the three cornered flap is returned to position and sutured with No. 10-00 Lukens Special Exodontia Catgut which absorbs in 6 to 8 days. Just before replacing the flap the sockets are washed out with normal salt solution with a large glass syringe. In a case of lower impacted third molar two incisions are made, one distal to the lingual cusp of second molar and one from gingival margin to lower border of jaw which gives the three cornered flap. It is sometimes necessary to cut this tooth in halves with a surgical bur, the width of the bur providing room for the crown to be moved distally and lifted from the socket with an elevator, leaving ample room to ease the root-half forward and out.

As to technique of film exposure, with the Engeln Dental unit we are able to adjust rays to any angle desired with the fewest possible movements. Very little noise accompanies the X-ray current. The patient is seated in a dental chair in an upright position. The foot-rest has been removed to allow the operator the proper access for the purpose of placing the film packet. The film packet is held between the index fingers, placed in the mouth, then held by the patient with the thumb of the opposite hand, for the upper mouth, and with the lateral aspect of index finger, of the opposite hand, palm down, for the lower mouth. For both upper and lower the fingers should be extended permitting the operator to adjust the tube so that the X-rays fall at a right angle on the film packet. Shadow will be normal size. The position of the operator for placing of film packet and adjustment of the tube is in front of the patient. With these precautions and as little conversation as possible I think the patient is quite at ease. Time and experience will teach one to read the different kinds of films produced. Due to different exposure and developing technique, we obtain light and dark films. All require study.

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RECENT EXPERIMENTS IN SECONDARY NURSING SERVICE.

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Recent experiments in secondary home nursing service have reached the stage of development where they confront the need of the criticism and co-operation of the general public. In spite of the fact that there are highly trained graduate nurses, such specialized nurses as Public Health Nurses doing preventive work, Visiting Nurses doing home nursing and educational work among the poor, Industrial Plant Nurses, and an unorganized and limited number of untrained practical nurses, there is still a need for a standardized home nursing service for families of moderate means and for cases which do not need a graduate nurse. This service has been carried on experimentally in several large cities, and the need has been proven by the great number of calls the Home Nursing Bureaus have received. In all cases the calls were too numerous to be filled.

Although the Cottage Nurse System of England might be called the pioneer movement, the work was first promoted in this country by the Bureau of Organizing Home Care for the Sick in the United States and in Canada, with a general office in Boston. Richard M. Bradley, Trustee of the Thomas Thompson Trust, was chairman of the General Committee. As a result, short course training schools and Home Nursing Bureaus were

started in and about Boston.

The plan has been, in all cases, to provide standardized service in household nursing to independent families of moderate means, who either do not need or cannot afford the skilled assistance of a graduate nurse. Emphasis has been placed upon the fact that this service includes housework whenever it is necessary to the welfare of the patient. The slogan of the Boston Household Nursing Association, and of the Detroit Bureau is:

"For the Care of the Sick in the Home,
For the Care of the Home during Sickness."

Miss Frances Stone was organizer for the committee in Boston, and it was largely through her suggestions and co-operation that a school at Lynn, a Bureau at Jamaica Plains, The Brattleboro Plan, and the Detroit Home Nursing Association were developed. The Committee of the Thomas Thompson Trust gave financial aid to this project, and to Milwaukee as well.

In considering secondary nursing service, this article does not take into consideration the Red Cross First Aid Course, the various War Emergency Courses, and others such as the six weeks' course given by the Chicago Board of Health—none of which imply supervision or responsibility after graduation.

The Bureau of Organizing Home Care for the Sick in the United States and Canada, organized a Household Nursing Association in Boston, which gives a seven months course to women between 20 and 45 years of age. The course begins with the study and care of the house, marketing, cooking, dietetics and nursing, after which the students are sent to co-operating hospitals for four months. The Bureau also organized a Household Nursing Association in Jamaica Plains, Lynn and Brattleboro.

A registry for qualified and graduate household nurses was maintained in connection with the training school in all cases, so that cases could be assigned to the nurses easily, and their work supervised.

The general plan for all these secondary nursing services has been:

1. To give women over twenty a six to nine months course, which includes a study of the theory of nursing, household management, hospital training, and bed side experience. (Credit to be given for previous equivalent training or experience. The Hospital Training is generally given at some hospital where there is no regular nurses' training course.)

2. To register these household nurses and send them out on cases under the supervision of an accredited graduate nurse. (Generally these Household Nurses are paid weekly by the Association. The Patient in turn pays the Association.)

3. To pay the nurses from $10.00 to $22.00 per week, depending on the experience and qualifications of the individual.

Besides the Massachusetts organizations, similar Bureaus of Home Nursing have been started in Detroit and Cleveland in 1915, Milwaukee in 1917, New York City in 1919, and in Cincinnati. In Virginia a secondary nursing law was passed.

The Virginia Law for training of attendants was proposed as a method of meeting emergencies produced by war. It applies to peace times also. Responsibility was given to the State Board of Examination of Graduate Nurses, the legal body of the Graduate Nurses Association. This Board was "to authorize the establishment for such training; prescribe the kind and duration thereof; examinations of persons completing said course; licensing of such persons to do such kind of nursing, public and private, and for the period of one year as such license may designate." The license fee is to be $2.50. The law expires July 1, 1922. A provision in the bill grants to the Board supervision over the attendants. The Board made a survey of the existing attendant agencies, also future possibilities, and finally came to favor the Cleveland plan of working out the problem. At this time the National Nurses Association adopted a code for aid and attendant service under Public Health agencies which is followed more or less closely by all the existing attendant services.

There have been variations in the organizations which have started the Home Nursing Bureaus. In New York the responsibility was with the City Department of Public Welfare, in Jamaica Plains with the Woman's Municipal League, in Cincinnati with the Nurses Association, in Cleveland with the Graduate Nurses Association, in Detroit with the Central Bureau of Nursing, and in Milwaukee with a private organization, The Milwaukee Society for the Care of the Sick. The Cleveland and Cincinnati Home Nursing Bureaus have been discontinued with recommendations that the

work of the bureaus was a good one and should be continued by some other organization.

At Detroit no training course is given but the nurses are selected by interview and after two years of supervised experience admitted to the registry. There the rate is as much as $4.00 per day for a mother and baby in a maternity case with $2.00 extra for each additional child to care for. (The superintendent did not explain the rate in the case of twins.) The Detroit Association is an exception, in that it gives no hospital training on the ground that it unfits for home service. This is not generally conceded, however, although too much hospital training does not benefit a household nurse. The Detroit Bureau has been pronounced a success by the superintendent.

In Milwaukee, a maintainance and tuition-free six months course with two months each of theory, hospital training, and practical experience is given. At the successful conclusion of this course the student is admitted to the registry, no fee attached, and called a "Cadette Nurse." A Cadette Nurse signifies one who works under supervision. The Cadette Nurses get from $15-20 a week, and are paid weekly by the Bureau of Home Nursing when on duty. When off duty they have the privilege of living at the attractive Bureau Home, and partaking of its social life. The Milwaukee Bureau has so far been a success, and looks forward to "greater usefulness in the future." Much depends upon the Superintendent and a sufficient inflow of applications from prospective Cadette Nurses.

When the Cleveland Nurses Association discontinued its attendant service, a published report of the reasons therefor was given. It included the following objections:

1. The service took too much money to maintain.

2. The public needs educating up to this grade of nursing service.

3. It tends to be more expensive for the patient than was intended by the organization.

4. On the other hand, the Household or Cadette Nurses were sometimes not getting as much as untrained, unsupervised, practical nurses.

5. Supervision was not appreciated by most of the patients and some of the nurses.

6. In Cleveland, under the Visiting Nurses Association, these Attendant Hours Household Nurses passed themselves off as "Visiting Nurses."

There was the responsibility of turning these partially trained nurses over to the public to pose as graduate nurses.

7. Some field of advancement needed to be opened to the ambitious worker.

The Milwaukee Society for the Care of the Sick feels that it can answer all of these objections.

1. Their Bureau is financed by the Centralized Budget of Philanthropies and private gifts, although in time it expects to be self-supporting.

2. The State Board of Health, the City Health Commissioner, state doctors, and the newspapers are helping to educate the public to the uses of the service.

3. While the graduate nurses are asking for $6.00 per day and "extras," the Cadette Nurses get as a maximum $20.00 per week, which is within the means of the average family.

4. The fact that untrained, unsupervised practical nurses are getting more than Cadette Nurses proves the need of control and regulation of this secondary service. Our increasing number of calls, coming repeatedly from doctors and families, indicates that the Milwaukee Bureau is giving satisfactory service. If it can secure a large number of workers, it will, by competition, eliminate the unsupervised practical nurse, and succeed in establishing a standard for this kind of service.

5. Supervision, like the plan itself, needs intelligent undertaking by the people who employ this service. It is intended to help the nurse and benefit the patient. In Milwaukee no supervision fee is charged the patient, but a small sum is deducted from the nurses weekly salary. This helps pay the superintendent's salary.

6. Undergraduate, practical, and other kind of nurses all try to pose as graduates, unless strictly honest. That situation is here, and always has been. There is less danger of it with the Cadette Nurses, because they are registered with an accredited organization, and are in a class by themselves.

7. In any industry or profession, advancement should be possible only by superior qualification. Since high school graduates are encouraged to take the regular three year course, entrance into

the short course is discouraged for them. Most of the applicants for the household nursing courses are therefore women of very limited education. They can advance only by conventional classification and soon reach a limit, just as they would in any other field they might enter. The Cadette Nurses are not justified in expecting advancement out of proportion to their qualifications.

Since the supply of graduate nurses is inadequate and expensive, and since in all cases the number of calls has exceeded the supply of Household Nurses, it is felt by all organizations which have maintained secondary nursing services, that the work is a most useful one, and worthy of being universally extended.

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BOOK REVIEWS

The Major Symptoms of Hysteria. Fifteen lectures given in the medical school of Harvard University. By Pierre Janet, Ph. D., M D. Professor of Psychology in the College de France. Second edition. The MacMillan Co., New York. 1920.

The lectures presented in this book were given at the medical school of Harvard University on the occasion of the inauguration of their new buildings and at the special invitation of President Elliott and Dr. J. J. Putnam, Professor of Nervous Diseases. This was in October and November of 1906. Some of the lectures were also delivered at the Johns Hopkins University, Baltimore, at the request of Professor Baldwin, and at Columbia University, at the request of Professor Starr. The original lectures have been modified somewhat in the second edition and certain researches made by the author have been added to the first investigations presented in the original lectures.

The author states that he has simply indicated them in his preface to encourage his readers to consider these lectures as a starting point and to go beyond the old teaching through their own studies. No library expected to cover nervous troubles would be complete without Dr. Janet's work.

Practical Tuberculosis. A Textbook for the General Practitioner and Those Interested in Tuberculosis. By Herbert F. Gammons, M. D., Superintendent Woodlawn Sanatorium, Dallas, Texas. C. V. Mosby Co., St. Louis, Mo. 1921.

This little work of 158 pages is intended to be only a brief presentation of the subject for the general practitioner, especially from the standpoint of diagnosis and treatment. It is in no way intended for the specialist or research worker. It is a short work covering a large field quite superficially, of course, and is so written that the average lay reader would understand it.

It is a practical little work and undoubtedly will do much good but it would seem that even the general practitioner who makes but a superficial study of the subject should have something more complete.

Atlas of War Ophthalmology. By A. von Szily. Collection of the War Ophthalmological Observations and Experiences at the Eye Clinic of the University of Freiburg i. Br. With a preface by Prof. T. Axenfeld. 589 pp., with 511 illustrations and 77 plates, 65 of which are colored. Ferdinand Enke, Stuttgart. 1918.

This magnificent atlas with its interesting and valuable text will be heartily welcomed as a lasting scientific monument of the great war. On account of the geographic location of Freiburg, large numbers of recently wounded eye patients were sent without loss of time directly from the battlefields, right from the beginning of the hostilities in 1914, and also later after they had been for more or less longer periods in more distant hospitals. Thus the author was enabled to see an abundance of eye injuries from the moving armies and from the war in the trenches.

All important conditions were photographed, skiagraphed with Roentgen rays, the ophthalmoscopic changes studied with the large ophthalmoscope of Gullstrand, and reproduced in four color prints, and the anatomic and historical findings of some cases, observed during life, carefully described and illustrated. The injuries of this war show, in consequence of the modern methods of fighting, certain peculiarities, which are compared with those of former wars, and the literature is extensively utilized, with bibliographies after each chapter.

The first part contains the chapters on injuries of the skull and eyes, orbital-temporal lesions, war hemianopsias, injuries of the orbit and its surroundings with remaining projectiles, lesions by projectiles of greater destroying force.

For the interpretation of the ophthalmoscopic image and the indications as to operative procedure, the exact distinction of choked disc and optic neuritis is advocated. As to the degree of prominence, attention must

be paid in the first place to inflammatory changes of the disc, which in cases of optic neuritis with slight swelling are in the foreground. Complications which lead to these inflammatory changes are much more frequent in injuries of the skull than in spontaneous choked disc in tumors of the brain. Choked disc and optic neuritis in injuries of the skull are important symptoms of complications; increased pressure, bone fragments, foreign bodies, meningitis, encephalitis, etc.

This symptom may be present even if the general condition of the patient is good and without his complaining of his eyes. It deserves the greatest attention, and if the first examination is negative it is urgently necessary to control cases of injuries of the skull from time to time with the ophthalmoscope. The occurrence or recurrence of optic neuritis or choked disc in the course of treatment always is a threatening sign, as well as the aggravation of the condition found at the first examination, and justifies a radical revision of the wound by the surgeon. If there is a difference between the right and left eyes, the swelling of the disc is, in four-fifths of the cases, greater on the side of the injury.

The author does not venture to decide with absolute certainty whether the diagnosis of choked disc or optic neuritis should be a signal for immediate operation. He quotes instances of the favorable effect of immediate operation and also those in which waiting for more significant general cerebral phenomena, at least in the majority, was not detrimental to the patient. On plate 1 excellent pictures illustrate choked disc in cerebral abscess after occipital injury: (1) at the first appearance of cerebral symptoms almost two months later; (2) increase of congestion; (3) regression of choked disc after successful operation.

The very interesting chapter on hemianopsias deals with quadrant hemianopsias and hemiamblyopias, color, homonymous, bilateral inferior hemianopsias, hemianopic scotomas; with photographs, Roentgen skiagraphs and visual fields. From these and the present knowledge gained also during peace, it appears that the visual center is not limited to the calcarine fissure and its lips, but probably extends to the lower part of the cuneus and ventrally to the gyrus lingualis, perhaps behind to the gyrus fusiformis.

The following chapters discuss and illustrate metastatic ophthalmia after war injuries, penetrating shots with an exit, with splendid ophthalmoscopic and histologic pictures of the accompanying chorioretinitis proliferans and atrophica, bilateral injuries, war blindness and the care of the blind, perforating injuries, intraocular foreign bodies, which the author believes represent half of all ocular injuries and infections. Eyes with projectiles in the interior are mostly lost.

On account of early preventive enucleation, sympathetic ophthalmia was rare. The author found only in one out of 80 eyeballs examined by him in serial sections changes suspicious of exciting inflammation. If the eyeball is completely destroyed, the contents of the orbit must be carefully searched for remnants of uvea, which, according to Stock, may show chronic inflammation identical with that of the exciting eye in sympathetic ophthalmia.

Ophthalmoscopically visible foreign bodies were rare, on account of the severe lesions of the ocular tunics by the kinetic energy of the modern projectiles, which prevented a view into the depth. Even after successful extraction of copper and brass and pieces of grenades, about 50 per cent of the eyes were lost through later complications.

Very interesting are the pictures of hemorrhagic infiltration of the cornea in hemophthalmus. The 11th chapter gives a discussion on the changes of the macula due chiefly to lesions of the choroid and isolated lesions of the retina, e. g., the formation of holes in the macula, with many instructive ophthalmoscopic and anatomic pictures. The question of the existence of a post-traumatic primary glaucoma is, according to the experiences in the war, answered in the negative.

Then follow chapters on gas diseases, injuries and burns by gas grenades, bombs, etc., organic lesions of motility and sensibility, with remarks on psychognostic defects after injuries of the brain, psychogenous war neurosis, lesions of the accessory sinuses and lacrimal passages, and finally the valuable chapter on plastic operations with numerous illustrations. There is a table of contents, and an index of subjects and names concludes the admirable work.

C. Z.

The Form and Functions of the Central Nervous System. An Introduction to the Study of Nervous Diseases. By Frederick Tilney, M. D., Ph. D., Professor of Neurology, Columbia University; attending Neurologist, the Presbyterian Hospital, and the New York Neurological Institute; Consulting Neurologist, Roosevelt Hospital, New York; and Henry Alsop Riley, A. M., M. D. Associate in Neurology, Columbia University; Associate Attending Neurologist, New York Neurological Institute; Attending Physician, Neurological Department, Vanderbilt Clinic, New York. Foreword by George S. Huntington, Sc. D., M. D., Professor of Anatomy, Columbia University. 591 Figures containing 763 illustrations of which 56 are colored. Price $12.00. Paul B. Hoeber, New York, publisher.

We are in receipt of this excellent book for review and urgently recommend it to all Physicians and Surgeons who are interested in the Anatomy, the Physiology and the Diseases of the Central Nervous System.

In addition to 50 carefully prepared and well written chapters there is an excellent glossary, an excellent reference for supplementary reading and a careful index. The illustrations are well chosen, clear in outline and probably as careful anatomical reproductions as we have ever seen in text book form.

It is quite evident that no expense has been spared in putting this new book before the medical profession, and its authors as well as its publishers are to be congratulated.

F. B. M.

THE WISCONSIN MEDICAL JOURNAL
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EDITORIALS

SUCCESS.

(S. E. J. Cox.)

SUCCESS is something which cannot be measured by the size of one's bank balance.

It is my personal opinion that when a man has found the work in which he is perfectly happy, if that work brings happiness to others also, he has attained success.

It may be a bit old-fashioned, but somehow I cannot believe that happiness can be found except through application of the Golden Rule Philosophy.

When a man's work for today is over and he goes back to the faithful wife and the little ones whom he left behind while he was away, what greater satisfaction, what greater joy, what greater happiness could he feel than that which always comes to the man who has played the game of the day's work as if he were dealing with his own brothers?

PAY YOUR DUES.

YOU are asked to reduce the cost of bookkeeping and correspondence by prompt remittance of your dues. By saving expense of second notices, members will add to the funds available for the extension of the Society's usefulness.

WHY THE MEDICAL PROFESSION SHOULD ORGANIZE.

COOK County Budget, 1920. 45 Assistant States Attorneys, $225.00 to $642.00 per month.

Physicians and Surgeons attending staff Cook County Hospital (by examination). NO COMPENSATION.

Lawyers are in politics and protect their material interests. Physicians are "TOO BUSY" to look out for their material interests.—*Bulletin Chicago Medical Society.*

THE "HOME-COMING" MEETING.

EVERYTHING points to the largest and best meeting of the State Medical Society of Wisconsin in Milwaukee, September 7, 8 and 9, when we meet to celebrate our 75th anniversary. We are particularly anxious to have all former Wisconsin men back to this home-coming. It matters not if they have practiced in Wisconsin or not. If they have been "Badgers" at any time, we want them back and we are writing them now and will again and again.

Members are urged to send in to the State Secretary the names of any former Wisconsin men living in other States. Everyone must help to make this mailing list complete. Do it NOW! !

WISCONSIN SURGICAL ASSOCIATION.

THE next annual meeting of the Wisconsin Surgical Association will be held in Marshfield on May 18th and 19th. This will be the first time that this meeting will be held outside of the city of Milwaukee and it is the aim to make this the banner meeting of the Association, as well as one of the best scientific medical gatherings that has ever been held in the state of Wis-

consin. Marshfield, because of its central location and its excellent railway facilities, is an ideal place, for men from every part of the state can easily reach the city within the space of a few hours.

This meeting will be a new departure from the usual form as it will be held in sections so that a great variety of surgical and borderline subjects will be discussed and thoroughly demonstrated during the daily sessions. Every one attending will thus be able to listen to those subjects in which he is most interested. It is the aim to make each discussion more readily understood by the use of lantern slides, drawings, charts, specimens, and apparatus, so that it will be in the form of a demonstrative clinic. The leaders in every branch of surgery throughout the state will hold their lecture clinics during the day at St. Joseph's Hospital, while at the evening sessions men of national reputation will be the guests of the association and deliver addresses upon their favorite topics.

It is desirous to demonstrate that the Wisconsin Surgical Association can hold successful meetings in various cities throughout the state and thereby be of greater service to the medical profession at large. A perusal of the preliminary program found elsewhere in this issue of the Journal will show at a glance that a full two days postgraduate course of the highest type will be given to every one who attends this meeting. A special feature will be the section upon the eye, ear, nose and throat, which will be conducted by the leading men throughout the state aided by their colleagues from sister states.

Ample hotel facilities will be available and in due time reservations will be made by the committee in charge. It is hoped that the profession throughout the state will do its utmost to help make this meeting the greatest one held to date, and show those in charge that their efforts have been fully repaid.

V. A. Mason, M. D.,
Chairman Program Committee.

THE STATE FAILS.

A CHILD suddenly falls ill. The malady is strange; physicians who are called give the disease a name, and tell the parents that any relief which science affords is only palliative and not curative, and that body forces frequently overcome the disease. The condition is actually encephalitis, an inflammation of the brain. As with other diseases affecting the nervous system, there ensue excitation, delirium, fever and twitching of the arms and legs. The parents are anxious and wish to do everything that is humanly possible. It is not surprising, therefore, that they accept the services of a pretender to scientific knowledge. They know no anatomy or physiology; they cannot judge between the true and the false; they know only that their child is sick and that a man who is permitted by the state to practice the healing art is offering them aid. They accept. How many parents would not? The chiropractor administers his treatment. Gradual remission of the symptoms ultimately occurs. The parents are overjoyed. In the first flush of their happiness, they write glowing testimonials to the chiropractor's ability. A miracle has been worked! The sensational press is furnished with "live" material. Sunday "feature pages" carry columns of write-ups and pictures and incidentally—or is it incidental—whole pages of advertisements of practitioners of the pretending science. "One hand washes the other." Then it is discovered that the miraculous cure was not a cure, that the treatments have in fact been so painful that the child's condition is possibly worse; that the chiropractor has been relieved of attendance, and that the child resents his muscular ministrations. Does the press give the public these facts? Do the advertisements cease? Not at all. What of the parents and the child? To whom shall they look? Whose duty was it to protect them against ignorance and incompetence? "The first duty of the state," says Disraeli, "is the care of the public health." When the state permits those with no scientific knowledge, who know nothing of physiology, of anatomy, of pathology, of infection or immunity, to treat disease — no matter what the method employed—the state fails in its duty.—*Jour. of the Amer. Med. Assoc.*, March 5, 1921.

MEDICAL FACTS AND CHIROPRACTIC FICTION.

THROUGHOUT the length and breath of the country there has recently been heralded an alleged marvelous cure of what the newspapers have been pleased to call "talking sickness."

Not only have the newspapers made sensational stories out of it, but the chiropractors have used it as a basis for flaming newspaper advertisements extolling the virtues of their cult. Reading these news articles and advertisements one learns that an 8-year-old child was suffering from a "strange talking malady" that was so remarkable that "specialists from all parts of the country were interested in her case." Further, one learns that "every form of sedative had been administered without improvement," and "all the medical physicians and consulting specialists whose services were tendered" failed to bring relief. Finally, a chiropractor "pleaded for the opportunity to save the child and gained consent of the parents." In a "few moments" the chiropractor "adjusted" the "second and fifth vertebræ," and "the talking stopped"! And, continued the full page advertisements, in very large and very black type: "She Has Completely Recovered and Is as Healthy and Happy as You." So much for the fiction. It made a good newspaper story, especially for those newspapers that saw in it the opportunity to suggest to the chiropractor fraternity that, as their business had been given a magnificent boost in the news column, it was highly desirable that they should add to this free advertising momentum an additional urge through the pages. Rate card enclosed. What are the facts? Briefly these: That the child did not suffer from so-called "talking sickness"; that the alleged adjustment of the spine did not "cure" the "sickness" and, finally, that the child has not "completely recovered", but is still dangerously ill. The case was one of epidemic encephalitis, with a temperature ranging between 99 and 103, and active delirium, inequality of the pupils and strabismus. The improvement was gradual and that incident to the ordinarily observed progress of the disease. As shown by the case record, the chiropractor's "treatment" did not modify the course of the disease. The "talking" had ceased at intervals previous to his visit and continued at intervals after his "treatment". But the publicity given the case offered great opportunities for advertising and, as advertising is an important part of the chiropractic curriculum, it is but natural that this cult should take advantage of it.—*The Jour. of the Amer. Med. Assoc.*, March 5, 1921.

AS OTHERS SEE US.

(*Editorials from the Lay Press.*)

WHISKEY AND THE MEDICAL PROFESSION.

One rotten apple in the middle of a barrel of perfect apples will rot the whole barrel; one preacher who goes astray will make the world sit up and condemn all preachers; one crooked official casts suspicion on all officials; one or more trimming, time serving "statesmen" make us suspicious of politics. So a few doctors who have issued whiskey prescriptions without regard to limitations or the complaint on which they were requested, have cast shadow on the whole profession in the matter of enforcing the prohibition act.—*The Janesville Gazette.*

THE DOCTOR.

Of all lives the life of the physician is the most self-denying. He has no time that he can call his own. His home is his office, and furnishes him no sweet retreat from irksome care. The night can never assure him unbroken rest. Sundays are often, whether he will or no, his busiest days. He has no holidays, and few and fragmentary vacations. Friendship furnishes him fewer solaces than to other men, for his friends are generally also his patients. He meets men in their morbid conditions—when they are sick and miserable; when they are well he knows them not. He can hardly make a friendly call without the hazard of having it converted, before the evening is over, into a professional one. He fights a battle in which, no matter how many victories he wins, he is sure to be defeated at last—for he is fighting death. And when the defeat, which must come sooner or later, does come, he is fortunate if unreasonable friends do not charge the defeat upon his lack of science or of care. But no man renders a more grateful service; no man comes nearer to our hearts; no man is more beloved. Other services may be as great, but none is more deeply or tenderly appreciated. He summons back from death the child and puts him in his mother's arms; the wife, and reunites her to her husband. No fee can ever compensate for such a service. He to whom it is rendered is forever debtor to the doctor.—*The Outlook.*

THE COUNTRY DOCTOR.

Many of the small towns and villages through New England have no resident doctors. In numerous instances there is no doctor within easy call. Distressing situations have developed repeatedly while sufferers waited for a doctor called from a city. Conditions have been so bad that the members of some eastern legislatures have been asked to study the plan of appropriating state funds to induce doctors to locate in the small places so medical attention would be available and the needs of the community be cared for. It would be in the nature of a subsidy, a term that is hateful, but in these cases it has been urged the subsidy would be for the protection of health and preservation of life, therefore justifiable.

New England is not alone a sufferer from the results of the drift to the city on the part of country doctors. Wisconsin has some communities that are in the same condition, where there is real need for a doctor, where the nearest is many miles away, presumably busy, so that an urgent call to a faraway place could not be answered promptly. The lure of the city is pulling the doctors away from the hardships of the small places. The city offers a larger field, some reasonable regulation of hours, and avoids the long night rides about the country's dark and ofttimes muddy roads. The country doctor has a hard life. There are many night calls, often far in the country. His fees are small, payments are not always made promptly, so he finds harder work and less pay than in the city. Yet the country doctor is most necessary. Often an immediate response means a life saved, suffering spared, the good of the individual and the community conserved. The shortage of doctors was illustrated when the flu swept the state and physicians had to be sent to many points where need was very pressing. The needs of the rural communities ought to be met, are met in most places, but in the others some method of distribution of doctors is needed. The problem is not too small for the attention of the legislature, if it cares to consider it.—*The Kenosha Herald.*

MORE OF IT.

The latest action taken by the state legislature to lower the standing of the commonwealth of Wisconsin in the eyes of intelligent people as reported in the dispatches today is the repeal of the compulsory vaccination law. A favorable leaning toward another bill for advice to congress telling that body to conscript the wealth of the nation to pay for the war and to provide that in the future no wars except to repel invasion shall be begun without a referendum of the people will help the same bad cause along excellently.

There are some things to be said against compulsory vaccination. As vaccination is a practically absolute protection against smallpox it might be suggested that the people who don't believe in vaccination be allowed to have smallpox if they like. This would be all very well if the people were all adults. But, as it is, the state owes a duty to the children who cannot protect themselves, a duty of protecting them against the stupidity and ignorance of their parents when those parents happen to be stupid and ignorant enough to disbelieve in vaccination.

But the intellectual measure of the state legislature appears not only in the passage of the bill but in the debate concerning it. The assemblymen actually seemed to think that what they believed had something to do with establishing the case, as if their belief or that of their constituents determined whether or not vaccination really protected people from smallpox.

This happens to be one of a number of things which cannot be determined by a majority vote. A legislature simple minded enough to hold the opinion on vaccination that this legislature appears to hold in this day and age is not qualified to tell congress how to pay for the war nor when to engage in war, neither is it fit to pronounce an opinion on any other matter. If it chances not to be wrong in any particular instance as it does now and then chance not to be the result is a mere matter of accident.

Again it is very plain that we do not pay our legislators enough money. We must pay more and get better qualified men for the job.—*The Wausau Herald.*

POSTGRADUATE SUMMER COURSES AT MILWAUKEE COUNTY HOSPITAL.

Last month, there was a notice of these courses. There have been but few applications. Unless more men respond to this offer, the courses will be abandoned.

THE JOURNAL CLINIC
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CASE OF PITUITORY TUMOR.

DR. WM. M. DONOVAN, UNIVERSITY CLINIC, MADISON.

CASE REPORT.

HISTORY. F. F. A white adult male, age 36 years and married, a farmer by occupation, first presented himself to us on August 21, 1920, complaining of defective vision, drowsiness and somnolence, and marked muscular weakness.

He was perfectly well till eight years ago when there slowly developed drowsiness, defective vision and impotence with lack of former sexual vigor. In a few months he was nearly blind in both eyes and had developed an external strabismus of the left eye, without diplopia. About this time he was very weak and felt hot and sweaty at times; the condition then remained stationary for about three months, when he began to improve till he had regained most of his lost vision, taking about six months in so doing. No intravenous injections had been given.

From that time until six months ago, an interval of seven years, he was much improved but maintained some residual, amblyopia, strabismus, impotence and slight drowsiness. During the past six months there has been a slow recrudescence of his former symptoms with the addition of occasional general headache and vomiting, but not at all marked.

11-6-20. At the present time he is nearly blind in both eyes, having only light perception in the left eye and is so drowsy that he lapses into somnolence during conversation. Appetite is good. Bowels regular. No urinary disturbance. No cardio-respiratory disturbance or symptoms. History is negative, except that he has been married for ten years and his wife has not been inpregnated. Post medical history is negative.

Physical Examination. The patient is obviously drowsy and at times becomes irritable. The face is expressionless and very slightly suggests the facies of acromegaly. However, there are no other skeletal or acral characteristics of this disease.

Skin is dry and warm and nearly devoid of hair. Hirci and crines pubis are very scanty while the face is smooth (he shaves once in two or three weeks). No obesity or female distribution of fat.

Eyes. External concomitant squint of left eye. Marked defect in vision in both eyes—almost stone blind in left. Pupils equal and react normally. Bitemporal hemianopsia. Ophthalmoscopy reveals bilateral optic atrophy but no choking of discs.

Genitalia. Penis and testicles show no gross change.

Thyroid. Not enlarged.

Blood pressure. 120 systolic, 80 diastolic.

Muscles. Slight but definite, myasthenia.

Heart, lungs, abdomen and nervous system were negative to physical examination.

Blood { Hb=96% / r. b c.—4,920,000 / w. b c.—4600 } Normal differential count.

Urine sp. g. 1014, albumen=trace. No sugar. No abnormal microscopic elements.

X-Ray of sella turcica. Shows marked enlargement.

Basal Metabolism. Normal figures.

Glucose tolerance test. Patient vomited the glucose and refused further studies along this line.

Blood Wassermann. Negative.

The patient having refused operation was given the extracts of the anterior and posterior lobes, each six grains daily by mouth for two months, without any improvement. We finally lost track of him.

We have here a case of undoubted pituitory tumor of slow growth, having both pressure symptoms and internal secretory manifestations. The X-ray shows it to be intra-sellar—the more frequent type. The long period of remission of symptoms (7 years) may be accounted for by the enormous erosion caused by the tumor, thus effecting a spontaneous sphenoidal decompression.

The local pressure signs of pituitory tumor, because of anatomical relations, are concerned chiefly with the optic tracts, nerves, and chiasm, and the third and fourth cranial nerves, more rarely the 6th nerve. In this case we interpret the left external squint as dependent on the amblyopia and not as a paralysis of the 6th nerve, mostly because the squint is concomitant in type.

That the anterior lobe is most involved here and in the direction of hypofunction rather than hyperfunction, is made probable by the impotence and absence of hair. The only evidences of insufficiency of posterior lobe secretion here are the somnolence and myasthenia. As in most advanced pituitory cases, we have here a combination of anterior and posterior lobe effects which for purposes of convenience has been styled "dyspituitarism." Primary anterior lobe tumors are much more frequent than posterior lobe ones.

Most cases of anterior lobe insufficiency due to tumor are primary insufficiencies rather than secondary ones, e. g., the insufficiency in the later stages of acromegaly which is a disease of hyperfunction of the anterior lobe due to tumor. In both conditions the usual finding is adenoma, but in the primary deficiency cases, it is a "chromophobe" cell which predominates (a very poorly staining cell) while in acromegaly the "acidophile" cell is predominant. When acromegaly gets to the insufficiency stage the chromophobe cell as-

sumes importance. The case herewith reported seems to be one of the primary insufficiency type, in view of the absence of signs of acromegaly or gigantism.

In cases of suspected early pituitory disease, the X-ray, perimeter and Wassermann tests are of paramount importance. The X-ray gives the first conclusive evidence of intra-sellar tumors, in showing an enlargement of the sella turcica, while the perimeter in showing a unilateral or bilateral temporal hemianopsia gives the first tangible evidence in supra-sellar, neoplasms, before the X-ray evidence is positive. The Wassermann reaction is most important in posterior lobe syndromes, since a syphilitic basalar meningitis by compression of the pituitory stalk can obstruct the flow of this secretion into the cerebro-spinal fluid of the third ventricle. The secretion of the anterior lobe is discharged directly into the blood stream. Gumma may occur in either lobe.

The treatment of pituitory tumor is surgical when local pressure effects or severe headaches are present, although the operative mortality is high in all but very expert hands. Cushing's first series of 122 cases resulted in about 8% mortality. Intra-sellar growths are best attacked through the nose, the trans-sphenoidal route, whereby the base of the sellar is removed and the dura incised, constituting a decompression. If conditions permit a partial anterior lobectomy is then performed, often the vision is markedly improved and headaches relieved. In supra-sellar cases a palliative subtemporal decompression may be done or preferably a partial lobectomy through the intra-cranial route, under the frontal lobe. These are not so successful as the intra-sellar cases.

Anti-syphilitic treatment in cases with a positive Wassermann reaction and little or no local pressure signs, is indicated. Glandular extracts of anterior or posterior lobes or both are indicated in cases of hypofunction without severe headache or local signs. The subcutaneous route of administration gives much better results than the oral route. In cases of anterior lobe deficiency one to seven grains of "Desiccated Pituitory Substance (anterior lobe)" may be given three times daily by mouth, while the same doses of the posterior lobe preparation may be used in posterior lobe deficiencies. The use of other gland extracts, e. g., thyroid, should be undertaken only when there is definite indication. In the case reported, thyroid extract is uncalled for in view of the normal basal metabolism. Here as in other fields of endocrinology we should divorce ourselves from the modern tendency to pseudoscientific, camouflaging "polyglandular therapy."

CLINIC OF HENRY B. HITZ, M. D., MILWAUKEE.

I was recently requested by Dr. Gordon to see an elderly couple to whom he had the evening before been called into consultation by the family physician.

The pair, man 62 and wife 57, ex-saloon keepers, had two weeks previously partaken of a meal of smoked goose breasts. Shortly thereafter both showed marked evidence of ptomaine poisoning:—Vomiting and purging for ten or twelve hours. Ten days later each developed symptoms of Aphonia and Dyspnoea, and were cared for by their own physician. He reports that at the time there were no throat symptoms; but as the condition apparently was not improving, Dr. Gordon was called into consultation, and at his request I visited the case the following day. At this time both were in identically the same physical condition. The local symptoms of the man were duplicated by that of the woman, although in a lesser degree. The woman however, had a greater degree of general prostration, and was flat in bed. The man was sitting propped up in a chair laboring for breath. His mouth was that typical of the later stages of typhoid. The lips dry, tongue thick, furred, glazed and cracked, and was very red. The teeth were covered with sordes, throat dry, glazed and flecked with dried mucus. The nose contained considerable masses of muco pus and crusts. The mucus membrane of the larynx also was dry and flecked with small crusts. Both cords were completely paralyzed and in the cadavaric position, inspiration being more difficult than expiration. Patient's finger ends and lips were cyanotic, and the supra clavicular and supra sternal notches were much depressed upon inspiration. Examination of the chest showed normal vesicular breathing and a few large dry rales. No dulness or vocal fremitus. The heart sounds were normal and pulse rate 70 to 80, while temperature ranged between 99° and 100.5°. Smears and cultures were made from both cases and proved to be Klebs-Loefler with many involution forms. A diagnosis of post-diphthretic paralysis of the larynx was made. It was difficult to determine whether the soft palate was involved due to the thick, dry condition of the throat. It is needless to describe the woman's condition as it was as near the counterpart of the man's as is possible to be, with the one exception that the bi-lateral paralysis of the larynx was not complete, as in the other case, and the patient's general condition was more profound.

Large doses of antitoxin were administered, but the woman died 48 hours later. The man has been steadily improving.

There are two unusual and interesting features to these cases:

First, the absolutely parallel features of the disease both as to time of onset, and character of the local lesions, neither having shown definite throat symptomatology until the bi-lateral laryngeal paralysis developed.

Second, the question of onset. Whether the smoked goose breast, which was undoubtedly contaminated, was the K. L. carrier, or whether these people having been previously exposed to diphtheria, were so devitalized by the prolonged vomiting and purging from ptomaine poisoning, as to awaken a dormant K. L. infection.

Certain it is that the physician in charge at the time of onset, may not be criticised for not "tumbling" earlier to the correct diagnosis. But these cases prove a valuable illustration that things are not always what they seem and that *too* much reliance must not be placed *upon an apparent etiological factor* to the exclusion of a thorough search for a more logical cause.

CLINIC OF DRS. THOS. W. AND ALBERT R. TORMEY, MADISON.

CASE 1 is a farmer, age forty-four, who complains of frequency, nocturia, hemorrhage and pain in the lumbar region. He was perfectly well until 1916 when he noticed some pain in the right inguinal region, which gradually radiated to the back and recently to the penis. For the past two months he has had frequency and nocturia. There has been no pain on urination. He has had hematuria on three occasions, but of short duration. One week ago the right epididymus became enlarged and painful and this is what really caused him to seek medical aid. The remainder of the history is unimportant.

Physical examination:

Male patient, five feet five inches tall weighing one hundred forty pounds, well developed and fairly well nourished. Head is negative except for extensive pyorrhea alveolaris. There are no positive lung findings and the heart is normal. The abdomen is below the level of the costal margin, and there are no masses or tenderness.

The right epididymus is swollen and tender, and there is fluctuation present. The extremities are negative. Rectal examination is negative.

On cystoscopic examination, the scope passed easily and the bladder capacity was normal. The left orifice was normal but the right was seen as a rounded hole, known as a golf ball orifice; and completely surrounded with small areas of ulceration. A catheter passed easily on the left side, but a great amount of resistance in the vesical portion of the ureter was met with on the right side, and it was impossible to pass a catheter more than two centimeters. This condition of the ureter was due, no doubt, to the thickened and infiltrated walls, which produced conditions unfavorable for dilatation. 1 c.c. of phenolsulphonephthalein was injected intravenously and the dye appeared in three minutes from the left side. Two fifteen minute specimens were collected and thirty per cent of the dye was secreted in that time

Case I. Typical appearance of advanced renal tuberculosis.

which showed that the left kidney was perfectly normal. The right kidney was inactive. The above findings were so typical of a renal tuberculosis that nephrectomy and testectomy were advised.

Technique of operation:

We now have the patient turned on his left side and the body raised by this special kidney elevator which increases the distance between the twelfth rib and the anterior superior spine. The incision which runs parallel to the twelfth rib begins, as you see, at the anterior edge of the latissimus dorsi and is carried forward and downward. The subcutaneous tissue and fascia covering the external oblique muscle are incised as is the muscle, which exposes the internal oblique. Care is taken not to injure the ilio hypogastric and ilio inguinal nerves which are found here. We now cut through the internal oblique and the tranversalis and come down to the lumbar fascia. One can now see the kidney move up and down with each respiration. Incising the fascia we come to the perirenal fat which must be dissected off the kidney. This gives a good operative field which is necessary on account of the close

relation of the kidney and the duodenum, and the presence of anomalous blood vessels, especially at the poles of the kidney. Eisendrath states that polar vessels are found in one out of every five normal individuals, and the rupture of one of these, which often comes directly from the aorta, is frequently the cause of a severe hemorrhage. We do not find any polar vessels leading to this kidney, which you will note is small and very nodular in shape. The ureter is thick and is easily isolated. We now ligate this in two places—cut through, and leave the ligature long on the distal end to serve as a tractor. We now place these two large curved clamps on the pedicle, ligate in two places and remove first the lower clamp and then the upper one, allowing the pedicle to retract, after excising the kidney.

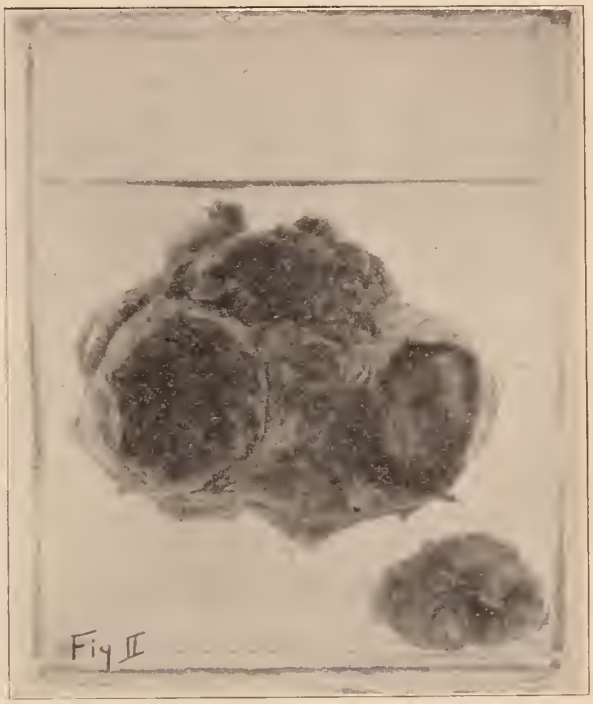
There is no hemorrhage so we will lower the patient and turn our attention to the stump of the ureter. In order to keep this stump from infecting the wound, we free it for several inches, thread it into a rubber tube, according to the suggestion of W. J. Mayo, and allow it to drain from the wound for several days. The wound is now closed layer by layer and a small cigarette drain is left in the upper angle.

The right epididymus and testicle show typical tuberculosis caseation and are excised.

DISCUSSION.

This kidney is small and very nodular (Fig. No. 1.). On section one can see that the secreting substance is entirely destroyed and the shell of what was once a kidney is filled with large caverns full of caseous material. (Fig. No. 2) It is a typical picture of occluded renal tuberculosis in which Nature has performed a so-called autonephrectomy. This accounts for the mild changes in the bladder, but the recent development of a tubercular epididymitis shows that he is not immune. In a study of 346 cases, Braasch has shown that seventy per cent of the cases of unilateral renal tuberculosis in the male develop lesions in the genitalia on the same or the opposite side, or bilaterally, before or after operation, and that they should be treated surgically as we have done today.

This case gives a textbook picture of renal tuberculosis and there are a few points which are well worth emphasizing. In the first place the patient is a male, and they are afflicted with this disease twice as frequently as the female. The majority of cases are seen between the ages of twenty and forty and this case comes under that heading. He gives a history of frequency and nocturia for the past five years, and has been treated for cystitis during all that time, as the majority of these cases are, whereas he should have been cystoscoped years ago. In his series Braasch states that twenty-five per cent of these cases complain of hematuria which this man did. So you see we really have a classical picture of the disease. But the main point we wish to bring out



Case I. Section of kidney showing destruction of kidney tissue and large caverns full of caseous material. Small object in lower right hand corner is section of the testicle removed.

this morning is the fact that all cases complaining of symptoms referable to the genito-urinary tract should be given the benefit of a complete cystoscopic examination.

BILATERAL NEPHROLITHIASIS — COMPLICATED WITH PYONEPHROSIS AND STONE IN URETER.

Case 2 is a woman, aged sixty, who entered the Madison General Hospital, January, 1921, complaining of frequency, burning, painful urination, and of a dull pain in the region of the left kidney which at times radiated to the groin and left leg.

The past history is interesting since she has had typical renal colic since 1900, coming on as often as six to ten times in a year, and requiring morphine each time to relieve the pain. In 1920 she first noticed a pain in the region of the left kidney which was increased if she wore any tight clothing. This pain has gradually increased in severity so that now it is constantly present, and the patient cannot lie on her right side without distress.

During the past two years she has passed four calculi, measuring 4 x 2 mm. and very irregular in shape. There had been no bladder disturbance until Dec., 1920, although she has always passed blood after each attack of colic. Since December there has been frequency, pain, and burning on urination.

The family history and remainder of past history is of no consequence.

Physical examination disclosed a small but well developed woman of five feet four inches in height and weighing 102 pounds. Head, neck, and chest were negative. The abdomen was below the level of the costal margin, flat, and soft. The edge of the liver extended one fingerbreadth below the costal margin. On palpation the left kidney was found to be enormously enlarged extending downward almost to the level of the umbilicus. It was painful to touch. The right was easily palpable but not enlarged or painful. There were no other masses or tenderness felt. The pelvis and extremities were negative.

Case II. Radiograph, showing enormous stones which filled the pelvis and upper pole. Shadow resembles pyelogram after pelvis has been injected.

An X-ray, Fig. 3, was taken which showed an enlarged left kidney with two large and two small stones and a left hydroureter with a stone low down in the ureter. There were also two small stones in the right kidney.

Cystoscopic examination revealed a very intense encrusted cystitis and was so painful that it was discontinued until treatment could be instituted and the condition improved. After one week of irrigations and instillations the cystitis was so much improved that a complete cystoscopic examination was carried out. The scope passed easily, and while there was a moderate cystitis present, the bladder held 350 c.c. without discomfort. The right orifice was normal, but the left was puffy and edematous. A catheter was passed easily on the right side but met a definite obstruction about two centimeters above the left orifice.

Case II. Large pyonephrotic kidney 8″x3½″. Large coral stone in upper pole stands out very distinctly.

The right kidney drained freely but no urine was obtained from the left side. A renal functional test disclosed the fact that the right kidney was normal as it secreted twenty-five per cent of the dye in thirty minutes. In other words, the left kidney was not active and a diagnosis of Pyonephrosis with stones in the left kidney was made and nephrectomy advised.

On February 2, 1921, a nephrectomy was done on the left side and a huge pyonephrotic kidney (Fig. 4) measuring eight inches long and three and one-half

inches wide was removed. The usual Mayo incision was used, but in order to give ample room to properly expose the kidney, the twelfth rib was fractured. On section of the kidney several large sacs of infected urine were emptied, and four stones were found (Fig. 5), the largest stone measuring 4 x 1 inches. It was

Case II. Kidney incised showing large stone completely filling the pelvis and resembling a sea-lion in shape. Typical coral stone in upper pole.

rather smooth with irregular antler-like projections. The body of the stone filled the pelvis of the kidney and the horns extended into the calyces.

The entire upper hole was filled with a very rough irregular freely moveable stone about 2 x 1 inches. Two smaller stones were in the lower pole of the kidney. The freely moveable stone in the upper pole no doubt caused local trauma and invited infection. The stone in the ureter caused obstruction with damming back of the urine and a hydronephrosis was the result. As this became infected as most of these cases do, a low grade pyonephrosis resulted with gradual destruction of the secreting surface of the kidney. As Fig. 5 clearly shows, all the parenchyma of this kidney had been destroyed and it was therefore a dead kidney. The great size of these stones can be accounted for by the fact that the residual urine became alkaline and this favors the deposit of phosphates.

In cases of bilateral nephrolithiasis, in which there are no acute symptoms, operation is often inadvisable for there is usually considerable destruction of kidney tissue during such an operation. This case, however, had acute symptoms as well as a functionless kidney and nephrectomy was advisable.

Post-operative Course:

The patient made an uneventful recovery, passing twenty ounces of urine the first twenty-four hours after the operation and gradually increasing the output in proportion to the intake. A renal functional test made ten days after the operation showed that the remaining kidney was secreting forty per cent of the dye in two hours. The patient was discharged on the sixteenth day after her operation.

PYELITIS OF PREGNANCY.
CLINIC OF C. HENRY DAVIS, M. D., F. A. C. S.

Pyelitis has been chosen for discussion in this clinic because it is a rather common complication of pregnancy and the puerperal state, yet one that is too often overlooked.

Etiology. The colon bacillus is the usual infecting organism. The pyogenic cocci, typhoid bacillus, pyocyaneous, pseudo-diphtheria, and bacillus proteus are less frequently found. Mixed infections are fairly common. The infection is usually unilateral, more often involving the right kidney. "Many theories have been advanced to explain the frequency on the right side, such as pressure of the pregnant uterus on the ureter, pressure of the head of the child, congestion and swelling of the mucous membrane of the bladder closing the ureteral orifice. It seems quite likely that it is a mechanical hindrance to the flow of the urine on the right side, plus an unusual absorption of colon bacilli from the bowel, which leads to this infection." (Kelly & Burnam).

Symptoms. The mild cases may present so few symptoms that the condition is overlooked or only discovered from urinalysis. The more severe cases may be ushered in with intense paroxysmal pain in the region of one kidney, usually the right, elevation of temperature, loss of appetite, etc. There may be an increased frequency of urination and some vesical disturbance. There is no definite type of temperature, the variations depending on the type of organism and the severity of the infection. There may be a typical typhoid curve, running at an even high level, or it may be remittent. When a pyelitis develops after labor it is practically always mistaken at first for a puerperal sepsis.

Diagnosis. In cases with fever and little or no

pain it is necessary to exclude tuberculosis and typhoid fever. The second case had been treated as a typhoid patient. When pain is present as well, appendicitis and acute gall-bladder diseases are usually suspected if the trouble is on the right side. Many women have been subjected to operation for acute appendicitis of pregnancy when the trouble was a pyelitis. THE DIAGNOSIS RESTS ON A CAREFUL UROLOGICAL EXAMINATION. A DROP OF URINE SEEN UNDER THE LOW POWER OF THE MICROSCOPE IF LOADED WITH PUS CELLS SHOULD PUT YOU RIGHT. It is my practice to examine microscopically, without centrifuging, every cloudy specimen of urine which shows a trace of albumen. During the latter months of pregnancy most normal patients will have several pus cells in every low power field of a voided specimen. Women with profuse vaginal secretion may have so many pus cells that pyelitis may be suspected from the number present. While careful cleansing of the genitalia before voiding will usually eliminate this pus, such cases may require catheterization.

Treatment. Pyelitis is a serious complication of pregnancy and demands careful treatment. Every case requires rest in bed, mild catharsis and plenty of water. The diet should be abundant but bland. Hexamethylenamin should be given in full doses. The urine is kept acid by sufficient doses of the acid sodium phosphate, care being taken not to give the hexamethylenamin so as to have the two in the stomach at the same time as this may cause severe gastric symptoms from the liberation of formalin. In the early months of pregnancy stubborn cases may rarely require a miscarriage. In the latter months good results have followed nephrotomy. Good results may follow kidney lavage. Premature induction of labor is at times indicated.

Case 1. Mrs. B., aged 27, first examined April 16, 1919, when about 2½ months pregnant. Her family physician reported that she had been troubled with pain which made him suspicious of a kidney stone and that the urine in the two tests he had made showed pus cells and a small amount of albumen. The history as given at the office indicated that she had had pain in the region of the left kidney for about a year. During the previous six months this had been much worse when she was on her feet. The pain was of a dull aching character and at times accompanied by a burning sensation. It was very difficult for her to do her house work and care for two children. When in the recumbent position she was usually comfortable.

The patient first menstruated at age 14, had been regular every 26 days, without pain, the flow being moderated and lasting five days. The last period began, January 30, 1919.

The family history was entirely negative, her father, mother, two brothers, and three sisters being reported as alive and well.

She had been married seven years and the husband was alive and well. During her first pregnancy she had very severe nausea and vomiting for nearly four months. When six months pregnant she developed a marked swelling of the face and was almost blind for three weeks. A long tedious labor with premature rupture of the membrane was terminated with forceps. The second pregnancy was apparently normal and terminated with an easy labor.

As a small child she had measles, mumps, and whooping-cough; when ten she had erysipelas and blood poisoning; diphtheria at thirteen; and had always been subject to tonsilitis. There was no history of influenza.

The examination of head, neck and chest was negative. The abdominal examination indicated that she was quite tender just below the left costal border, and, in the region of the caecum. It was not possible to palpate the kidney as the patient was fairly stout. There was no history suggestive of appendicitis. The vaginal examination revealed a very weak, skin perineum, a badly lacerated cervix, a uterus rounded, softened and suggestive of a 2½ months pregnancy. The left ureter was easily palpable and found to be quite tender. The bony pelvis was roomy all measurements being normal.

The urine showed a distinct tract of albumen by the Heller's test and microscopically a few red and white blood cells and a small amount of kidney epithelium. There were no casts. A twenty-four hour specimen showed an equal division between day and night, a total of 2000 c.c. with sp. gr. 1.020.

An X-ray was not obtained at this time as it was evident that the kidney condition was no worse than it had been for months and as any operative treatment might endanger the pregnancy we believed the pictures could wait until after the delivery.

The urinary findings remained practically the same until 8-11-19 when a heavier ring of albumen was noted and an increased number of pus and blood cells were found microscopically. The patient reported that she had had more severe pain during the past week and had found it necessary to lie down much of the time. The next tests of the urine showed that there was considerably more pus and blood in the evening than in the morning specimen. A catheterized specimen showed microscopical findings similar to those of the voided. Cultures showed Gram positive bacilli and diplo-cocci. The patient was now placed on urotropine grs. v, q. i. d. and acid sodium phosphate t. i. d. A single X-ray plate taken at this time showed an indistinct shadow of a stone in the pelvis of the left kidney.

During the next few weeks there was a gradual im-

provement in the urinary findings and less pain. 10-6-19 she reported that during the past week there had been practically no pain. Only a slight trace of albumen was found in the urine. The urotropine was now discontinued. On November 2nd she entered Columbia Hospital and was delivered spontaneously after a fairly easy labor of 16 hours. Nitrous oxid-oxygen analgesia was given intermittently during the last two hours with good results. A catheterized specimen of the urine taken after delivery was negative for bacteria, but contained pus and blood in considerable amounts. Another X-ray picture taken three days after delivery confirmed the diagnosis of stone in the left kidney.

On the eighth day of the puerperium the temperature went from normal to 102 at 4 p. m. and during the following five days ranged from 102 to 104.6. November 11th the white blood count was 24,800. The patient complained of severe pain in the upper left quadrant of the abdomen most of the time and was markedly tender to palpation. November 14th the temperature began to drop and the white count was 10,200. Plates made from a catheterized specimen showed a pure culture of colon bacillus. November 19th the temperature returned to normal and the patient was discharged in good condition the next week. January 19, 1920, the stone was removed by a colleague at St. Mary's Hospital. The patient made an uneventful recovery and has enjoyed good health since the operation.

Case II. Mrs. D., aged 27, was seen in consultation 12-3-20. She had been married 4 years and this was her first pregnancy. Her last period began May 2nd, 1920. At this time she was in good health. About the middle of May she became nauseated and during the following ten weeks had more or less vomiting. After the nausea disappeared she felt well until the latter part of October when she developed a severe cold with general aching, pain in the back, loss of appetite, etc. With this there was some abdominal distress but mostly in the upper right quadrant. About two weeks before I saw her she developed a dull, aching or sore feeling in the upper left quadrant on turning or coughing. This had gradually increased in severity.

The family, marital and past history were all negative.

The attending physician stated that the urine had been tested at frequent intervals in a local laboratory and that varying amount of albumen had been found, but no sugar or other abnormal chemical findings. *It had not been examined microscopically.* A blood culture and Widal test were both negative. A moderate leucocytosis was reported. The patient was on a liquid diet similar to the former starvation diet of typhoid fever. She had not felt life for several days and he feared that the baby was dead.

The head, mouth, neck and chest were negative. The fundus uteri reached the navel. The fetal heart was located to the left of and below the navel. The rate was 140. She was quite tender over the upper left quadrant of the abdomen. Microscopical examination of the urine as voided showed that it was loaded with pus cells. A catheterized specimen was found to contain bacteria as well as the pus. Cultures on glucose agar slants showed the bacteria to be a gram negative gas producing bacillus.

The patient looked septic. The temperature chart showed that she had run a temperature of from one to three degrees for several weeks. She complained of nausea and was getting very little nourishment. The patient was suffering both from pyelitis and starvation. Of the two it seemed that the latter was the more serious. Expectant medical treatment for the pyelitis with a gradual increase in diet was advised. It was believed that very little improvement could be expected during the next week. But with frequent small feedings and gradually increasing amounts she began to rally and in a week's time showed a marked improvement. Christmas Day the husband phoned that they had a five pound girl and that mother and baby were both in good condition.

DISCUSSION.

The first case was primarily one of kidney stone. A pyelitis developed during pregnancy, cleared up with treatment and recurred during the puerperium. It is probable that the expulsive efforts of the second stage of labor with the great increase in intra-abdominal pressure caused some injury to the kidney as the patient complained of severe pain in the upper left quadrant of the abdomen near the end of labor.

The second case had been mistaken early for typhoid fever and even with a negative blood culture and Widal her other symptoms were so typical that her family physician treated her for typhoid. Had he used the plan of feeding rather than that of starving the typhoid patient this would have done little harm. But much of the woman's trouble was from lack of nutritious food. There had been an abundance of laboratory tests, but, as is too often the case, these were made without proper cooperation between the laboratory and the physician. Had the laboratory technician taken the few seconds required to examine microscopically, without centrifuging, a drop of the turbid urine in which albumen had been found, the pus would have been noted, and the family physician could have made the diagnosis without the necessity of three consultations and much unnecessary laboratory work.

Pyelitis cases should be kept under observation after delivery and treated until the condition is entirely cured. The treatment must be varied according to the urological conditions present.

CLINIC OF DR. L. M. WARFIELD AT MILWAUKEE COUNTY HOSPITAL.

CASE I. G. K., a painter, white, aged 38, was brought to the Milwaukee County Hospital Feb. 5, 1921, in partial coma. He could be aroused but after answering a question in a whisper or in a mumbling voice he would relapse into a stupor. No history could be obtained from him. He lay with the eyes closed. There was no edema. There was a fine tremor over the whole body. The neck was slightly stiff. The tongue was dry and coated, with sordes on the teeth. The right eye was absent, the left pupil was small and seemed not to respond to light. The lungs were clear on percussion and auscultation. The heart was rapid, 120 to the minute, but regular. The organ was not enlarged. There were no murmurs. The recti abdomini were tense. The legs were somewhat spastic. On both sides there was a suggestion of Kernig's sign. The knee jerks were exaggerated. The blood pressure was 130/90. Temperature 103° F. Pulse 120, respirations 28. Leucocytes were 21,850. Spinal fluid was not under pressure, was clear, 7 cells per cu. mm. and there was no globulin. There was incontinence of urine. Urine obtained later by catheter was dark amber, clear, specific gravity 1025, acid, full of albumin, no sugar. Microscopical examination showed pus cells, epithelial and red blood cells but no casts were seen.

From his wife we learned that he had dropsy four years ago. He has had rightsided frontal headache since loss of right eye in accident eight years ago. His present illness began in October, 1920. He had stomach trouble and dizzy spells. There was no edema. He became delirious five days ago, his headache became worse so that he went to bed. The headache has been chiefly in the back of his head. Lately he had trouble in walking, some unsteadiness in gait, no paralyses.

He appeared so much worse on Feb. 6th, that 400 c.c. blood were withdrawn and 500 c.c. salt and soda solution were given in the vein. Immediately after the venesection he awoke, talked rationally, except that he was disoriented in space.

However, the improvement was only temporary. He relapsed into coma, had generalized convulsions, the temperature went up, edema of the lungs set in and death occurred Feb. 7th at 10 a. m. He was in the ward from late afternoon of the 5th to morning of the 7th.

The blood creatinin was 2.2 mg. the urea 33.48 mg. per 100 c.c. Sugar .138%.

DISCUSSION.

This case puzzled the Intern Staff considerably. They found a man in coma, with a normal blood pressure picture and no edema, who had no history or signs of head injury and in whose urine albumin was found. Meningitis was suggested by the partially rigid neck and the suggestive Kernig's sign but the spinal fluid was normal. Pneumonia was thought of but the lungs did not reveal any lesions and the respirations were not greatly increased. There was no cough.

When I saw the man on the morning of Feb. 6th, he was in coma with occasional twitchings of the muscles of the body. The one pupil was contracted, the breathing was somewhat stertorous. I suggested that it was a case of acute uremia in a man who had had acute nephritis and had been left with a subacute tubular nephritis. The attack was one of acute kidney insufficiency, if one wishes to call it that. At any rate the kidney seemed to be responsible for the condition. In cases of tubular nephritis the blood pressure is not much changed. It is in the uremia of the chronic interstitial form that there is hypertension. The uremia in the two cases is also different and the non-protein nitrogen content of the blood is different. In the so-called sthenic uremia (Foster) occurring in the chronic interstitial kidney, there are convulsions, hypertension, no edema, not much albumin in the urine and high values for blood creatinin and urea. In the asthenic form occurring in the tubular, or tubulo-glomerular types of acute nephritis, there are coma, little or no change in blood pressure, usually considerable edema, much albumin in the urine and only slight increase in blood nonprotein nitrogen.

The diagnosis was uremia with acute nephritis superimposed on a subacute nephritis. A partial autopsy was obtained. The abdominal viscera were quite normal in appearance, the peritoneum was smooth and glistening. The kidneys were much enlarged, dark reddish, the capsule stripped readily. The organ cut with some resistance. Section showed a cortex twice as thick as normal in which the glomeruli appeared as shining points. The cortex was glassy, mottled reddish with yellowish and red streakings. The pyramids were reddish, streaked and all showed more or less ground-glass whitish appearance at the papillae extending halfway to the cortex in several pyramids. Permission was given to view only the abdomen. The lesions found in the kidneys seemed sufficient to account for the disease and death.

CASE II. On November 25, 1919, Mrs. L., white, widow, aged 49, was admitted to the Milwaukee County Hospital complaining of shortness of breath, swelling of face and feet and frequent, painful urination. Her father died at the age of 48 of kidney disease. Otherwise the family history has no bearing on the case.

As a child her health was not good. She had measles, mumps and chicken-pox. Acute tonsillitis was a frequent ailment but she had no rheumatism. In 1911 she had an attack of appendicitis. She had been subject to attacks of precordial pain for many years with occasional palpitation. For the past three years she had shortness of breath on slight exertion with swelling of the ankles now and then. She has had no gastro-intestinal symptoms. For the past three years she said that she had to urinate every twenty minutes at night. There was hesitancy and pain at the end or urination. The quantity was large. There was puffiness of the lower eyelids at times.

Menstruation begain at the age of 15, was always regular and painless. She had three pregnancies. All children were born alive. She passed through the menopause four years ago. Her present illness really dated back to 1915 when she first noticed frequency of urination with pain at the end of the act. About 14 months ago she passed blood in the urine for a period of two weeks. The dyspnea on exertion which had been present since childhood has become more intense. There has been edema of the feet for the past four years and two weeks before admission her face began to swell, particularly the under eyelids. She has become weak recently and has lost her appetite.

Physical examination revealed an anemic, poorly nourished woman. The face was edematous, the skin of the body dry and atrophic, the subcutaneous tissue was atrophied. The eyes were slightly prominent, the pupils were normal. The tonsils were small and buried between the faucial pillars. All the glands of the neck were slightly enlarged. Over the upper chest dilated veins were visible. The lungs were clear on percussion and auscultation. The apex beat of the heart was seen and felt in the 5th interspace 12 cm. from the midsternal line. To the right the dulness extended 5 cm. at the level of the 4th rib. At the apex was a presystolic rumble ending in a somewhat snappy first sound together with a systolic murmur which was transmitted into the axilla and heard in the back. Towards the base a systolic murmur was heard which had a scratchy sound over the body of the heart. At the aortic cartilage there were a soft systolic murmur and a clear low-pitched second sound. At the pulmonary area there were a scratchy systolic murmur and a loud second sound. No diastolic murmur was heard. There was intense tubular breathing over the lower manubrium and definite dulness over the anterior mediastinum. The abdomen was full below the navel. Respiratory movements were present to the pubis. It was soft to palpation. There was a large mass in the right upper flank which moved with respiration, could be grasped between both hands, had the general shape of the kidney and was slightly tender. There was no dulness in the flanks. The liver was not palpable. The spleen was not enlarged.

The reflexes were present. There was no edema of the ankles or lower legs.

The urine varied in specific gavity from 1007 to 1025. There were always quantities of pus cells, often red blood cells but no casts. Examination of catheterized specimens showed no tubercle bacilli.

The Wassermann reaction was negative.

Several 'phthalein estimations gave less than 15% in two hours.

The blood showed a secondary anemia without leucocytosis.

The blood pressure was always high, systolic from 152-182 mm., diastolic from 82-100.

On Dec. 2, 1919, the creatinin of the blood showed 4 mg., the urea 65 mg. per 100 c.c. On Jan. 6, 1920, the figures were, creatinin 6.05 mg., urea 80.18 mg.

While in hospital the patient had an attack of cardiac decompensation. There were dyspnea and cough, the heart was in gallop rhythm, the liver increased in size so that it could be felt 4 cm. below the costal border. Her distress on micturition was great. She was given a bladder injection daily of 20% oil of gomenol in two ounces of olive oil. This relieved the distress considerably.

The temperature was irregular, the pulse rapid, and it had a suggestive collapsing quality but was not a typical "water hammer" pulse. She recovered from the attack of decompensation and became fairly comfortable, except for the frequent urination.

About the first week in January she began to have attacks of epistaxis and the thorax revealed evidences of fluid on both sides. She refused to be punctured. She gradually grew worse, the hydrothorax increased, she became comatose a day before death. She died Jan. 16, 1920. A partial post mortem was obtained including only the abdominal cavity.

In the cavity which was smooth and glistening was a small amount of serous fluid in the cul-de-sac. There were adhesions about both tubes and ovaries. Numerous adhesions were around liver and gall bladder and spleen. The stomach and intestines showed no gross changes. The right kidney was quite large and there was an irregular mass just below it. This latter mass was rather irregular and elongated in outline. On removing this kidney it was found to fluctuate and on incising it, it was seen to be made up of large and small abscesses, all in communication with the pelvis. No normal kidney tissue could be seen. The abscess cavities were lined by fairly smooth tissue. The mass below the kidney was composed of inflammatory tissue completely surrounding but not occluding the ureter. The ureter was somewhat constricted at the pelvic brim.

The left kidney was smaller than normal and irregular in outline. The pelvis and ureter were both much dilated. The cortex of the kidney was very thin, the medulla was barely recognizable. The capsule stripped easily leaving a slightly roughened surface.

The urinary bladder was very small, the wall thickened, the mucous membrane congested, and infiltrated but not ulcerated. It contained about 30 c.c. of what looked like purulent exudate. The gall bladder was distended but there were no stones. The liver was slightly enlarged. On section there was mottling, the lobules were small and there was increase in perilobular tissue.

The spleen bound down by adhesions was enlarged, firm and on section was beefy in appearance.

Smears from the cavities of the right kidney did not reveal any organisms. No cultures were made.

DISCUSSION.

Here was a woman who for three years had had great frequency of urination with bladder symptoms together with symptoms pointing to some cardiac trouble. Then there was a history of hematuria. The most probable disease giving those urinary symptoms is tuberculosis of the kidney. Then when the huge mass was found in the flank there was the probability that she had hypernephroma. There was some cardiac lesion probably an aortic regurgitation but that was quite obscured by her other symptoms. After we had followed the urine for several days, we could find no tubercle bacilli in the urine and we obtained high values for non-protein nitrogen in the blood, we decided that we were dealing with pyonephrosis. certainly unilateral, probably bilateral.

It is sometimes difficult to differentiate the uremic coma of nephritis from the coma of pyonephrosis. In males it is probably simpler because the cases of pyonephrosis are in old men who have led a catheter life for a time or who have large prostates. In the coma of acute nephritis the blood pressure is usually not high. In the cases of chronic interstitial nephritis the blood pressure picture is always high. The coma of the nephritis is usually profound, that of the pyonephrotic more of a lethargy from which the patient may be aroused.

The non-protein nitrogen is high in the chronic nephritis, somewhat increased in both the acute nephritis and in the pyonephrotic.

In the case here related the diagnosis of pyonephrosis was based on the character of the urine, pus and albumin with no casts, the failure to find tubercle bacilli, the tumor mass in the side, the moderate increase in the non-protein nitrogen.

She had a high pressure but she also had a large heart with valvular lesions which was felt sufficient to account for the pressure and was therefore discounted in the final diagnosis.

The question of operation arose but it was felt that with her badly damaged myocardium she would not survive an anesthetic. Further when one kidney is the subject of pyonephrosis the other usually is also. Nothing would have been gained, as the autopsy showed, by operation. The death was the result of both the kidney and the failing heart. Which organ was the most involved is not possible to say. Either could have caused death.

It was unfortunate that the heart could not be examined. However, it was certain that there was heart failure so the actual valvular lesion was only of academic interest.

The large inflammatory mass along the ureter was missed. Possibly it was felt but could not be differentiated from the mass due to the enlarged kidney.

The partial autopsy in this case confirmed the clinical diagnosis and further showed that operation would have been of no help.

The cause is even now unknown. No bacteria were found in smears although culture might have shown them. It seemed as if the bladder must have been affected at first and then have dammed back the urine upon the kidneys which later became infected with some organism. Further than this speculation it is not possible to go. It demonstrates that women can have a condition which is usually confined to men on account of the anatomical peculiarity of the bladder with the prostate gland at the internal sphincter.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY MEETING, FEBRUARY 2nd, 1921.

The Value of the Differential Leucocytic Count in Diagnosis—Dr. C. H. Bunting. In introduction stress was laid on the technique of making blood smears, the cover slip method being given preference. Likewise the speaker emphasized the importance of using a single staining method so as to develop one's accuracy. Five hundred cells were named as the proper number for any scientific studies on the differential count.

The figures given by Dr. Bunting for the normal differential count were neutrophiles, 60-70%; eosinophiles, 2.5%; basophiles, .6%. These he classified as cells of marrow origin. The small and large lymphocytes which constitute 25-30% of the circulating leucocytes arise from the lymphoid tissue although occasionally they may arise in bone marrow. These classes of cells should in Dr. Bunting's opinion not be separated since the large forms represent the senile type of the small lymphocyte. Large mononuclears and transitionals are of the marrow origin, the large mononuclear being an unusual form of the transitional. The mononuclears are found normally in .2%, the transitional 6.5%.

Dr. Bunting stated that comparative fixation in total differential counts did not represent an inactivity of production but rather constant production kept at a given level to meet the needs of an individual under normal circumstances and changing to combat infection. He cited Rous' work on the ligature of the thoracic duct by which method the output of lymphocytes was proven

to be 3,389,328,278 in twenty-four hours. He added that this was more than circulating blood contains at any given time. From personal observations 314,000,000 polymorphonuclear leucocytes were determined to arise from the bone marrow of a rabbit in 24 hours. The fate and life cycle is as yet unknown.

Coming to the question of the application of blood studies to diagnosis, the studies of red cells, the white cells, and blood platelets are the obvious matters of importance. Grouping the blood pictures, Dr. Bunting passed over those blood diseases wherein the study of blood smears was paramount in diagnosis, the leucemias, pernicious anemia, and secondary anemias. Secondly, the value of differential counts is apparent in the diagnosis of an acute pyogenic focus. Bone marrow stimulation occurs whenever pyogenic cocci invade the body. Adler of Zürich states that no disease with an immunity runs its course with a leucocytosis. Dr. Bunting states that there are several notable exceptions, namely scarlet fever and small-pox. He drew the curve of the common pyogenic infections, where the primary rise in leucocytes is followed by a leucopenia and then a secondary steady rise, importance being placed on the absolute and relative polymorphonucleosis. He stated that anything above 70% polymorphonuclears in differential count indicated a pyogenic infection.

He next passed to the third group of specific infections with characteristic leucocytic curves, influenza, scarlet fever, measles, chicken-pox and small-pox. The leucocytic picture for each of these diseases was outlined and the speaker concluded with a sketch of his observations on leucocytic curve of Hodgkin's diseases, some attention being put on the confusion introduced by chronic sinus condition.

This paper was discussed by Drs. Lorenz, Greeley, Dawson, and Middleton.

The Study of Bone Cells—Dr. T. H. Bast.

Dr. Bast began his discussion by outlining the three cells concerned in bone formation, the fibroblast, osteoblast, and bone cells. The theories of the histologic relationships of bone cells, the lacunae and the canaliculae were outlined and the possibilities of error in the older methods of decalcification were emphasized, strong acids obviously introducing artifacts. Dr. Bast's studies were made on the thin bony plates of the sphenoid or ethmoid without decalcification by the strong acids. Gentian violet as a staining agent proved most satisfactory. Contrary to the accepted theories he, by some beautiful preparations, has demonstrated the lacunae to be completely filled by the bone cells and protoplasmic processes of these cells to occupy the infinite ramifications of the canaliculi. These cells by his staining methods were shown to be stellate in shape and to contain a finely granular protoplasm. The nucleus was eccentrically placed and was rich in irregularly distributed chromatin. Centrosomes were visible in the younger forms and division occurred by amitosis. There is apparently a division of the bone cells without a rearrangement of the chromosomes. The demonstration of these bone cells in division was quite convincing and rather opposed the generally accepted ideas of the function and histology of the same. Dr. Bast indicated that further studies were being pursued to determine definitely the role of these elements in bone formation.

The paper was discussed by Dr. Bunting and Dr. Dawson.

UNIVERSITY OF WISCONSIN MEDICAL SOCIETY, MARCH 2nd, 1921.

The Effects of Hemorrhage and Infusion on the Heart —Dr. W. J. Meek.

The speaker in introducing his subject stated that the circulation reacted to hemorrhage, first, by a decrease of the solids as fluids come in (an old observation); second, by a peripheral constriction, and in this relation he asserted that due to the normal elasticity of the larger arteries, under a reduction of the total blood volume they might passively adapt themselves. Third, the pulse rate increases, particularly after a considerable hemorrhage. Fourth, there is a respiratory increase which tends to increase the venous return to the right heart. Fifth, the blood pressure falls, only however, after a removal of blood to a total of 2-3% of the body weight.

Eventually venous return may be so cut down as to render systole ineffectual, and therefore efficient circulation impossible and collapse results. The amount necessary to bring about this end has never been studied. Furthermore it has been assumed empirically that the large venous pools primarily compensated for this loss. With an end to a comprehensive grasp of the factors concerned, study was first directed towards the diastolic size of the heart. Very conclusively in a series of twenty-one experiments on dogs it was proven that there occurred no change in the diastolic size until over 20% of the total blood was removed. Characteristically, this change came on suddenly after a given point. For instance, in one animal after bleeding 30% of the total blood, there was a reduction of 16% in the cardiac area with a corresponding rise in pulse rate.

The second method of approach to the problem was by plethysmographic studies of the heart size to determine its output. Immediately after bleeding there is definite decrease in the minute output of the heart with an increase in rate. A quick recovery occurs, even on repeated bleeding, until a total of .6% of the body weight is reached. Then a slower recovery after bleeding is determined and at varying levels beyond this, hemorrhage results in complete loss of circulatory efficiency, 1% of the body weight being stated as the critical level. In explanation of these phenomena, first, we might assume that the body fluids completely made up for the loss of blood, but observations in this study have determined that never were the hemoglobins so diluted as to represent completed blood volume by dilution. Secondly, the compensatory fillings from the portal circulation. Dr. Meek is inclined to discredit this since it would imply a constriction of the splanchnic area primarily; but without a rise of blood pressure at the onset this would seem improbable. The recent appearance of Hooker's work on the venomotors lent an im-

petus to this study. It would seem possible that hemorrhage through vasomotor stimulation might lead to constriction of the venules. By direct observation it was determined that when an animal was bled to 2% of the body weight, that is 1/5 of the total blood, there was a sudden reduction in the size of the capillaries and venules under observation; so that it would seem that an explanation for the compensation were at hand.

Since plethora is the main clinical indication for venesection the next experimental step was an attempt to induce experimental plethora by infusion. Collateral observations made on the animals through these experiments indicated that even a 50% addition of infused fluids to the total or normal blood volume gave only the slightest increase in area. However, on bleeding such animals a marked reduction in the heart area occurred on removal of a relatively small quantity of blood.

It has been assumed that venous pressure should be directly related to the heart size and the heart size dependent on venous pressure, diastolic tonus, and peripheral resistance. However, a proportionate change of venous pressure has not been noted with change in heart size. The pulse does rise with plethora and the question naturally arises, where does the added fluid go? The experiments have not settled this point, but Dr. Meek suggests that again the venocapillary area probably accommodates for the added burden.

The paper was discussed by Drs. Eyster, Middleton, Loevenhart, Dawson and Clark.

Studies on Stimulation of Respiration when Depressed by Increased Intracranial Pressure—Dr. A. S. Loevenhart.

All previous studies on stimulation of the respiratory center have been made on the normal. To render the experimental conditions more nearly comparable to the indications clinically, namely, stimulation of the depressed respiratory center, increased intracranial pressure was induced by the use of Ringer's solution subdurally. In order to render a constant degree of medullary anemia an ingenious valve devised by Kolls was used whereby the blood pressure and the degree of intracranial pressure were rendered interactive and interdependent. The drugs studied were atropine, caffein, papaverine, ammonia, strychnine, and sodium cyanide. The results with sodium cyanide were most illuminating in that the response was more constant and more accurate than that of any other drug. Indeed the degree of response after preliminary use might be predicated absolutely, although its action is very evanescent and inertia may lead to a continued discharge of stimuli after the drug has been withdrawn. With this drug respiratory function was maintained with intracranial pressure at a level incompatible with respiration or life prior to its administration. Less than one milligram per minute given intravenously from a burette is absolutely free from toxic action or danger. These studies proved further that atropine under the conditions of respiratory depression from increased intracranial pressure was worse than useless, indeed quite dangerous. Caffein had little effect and early death resulted when dependence was placed on this drug experimentally. Strychnine gave some definite respiratory stimulation under the conditions of the experiment. The effects were late in onset but somewhat longer continued than the cyanide, and combined with cyanide gave better effect than either drug alone. The clinical application of these observations was, according to Dr. Loevenhart, rather uncertain. However, he stated that it was conceivable in the cerebral edema of certain infectious diseases that sodium cyanide might find a use, or in tiding over a patient with increased intracranial pressure for surgical interference. During operation for the relief of this condition it is conceivable that sodium cyanide intravenously in the amounts above stated might be of value.

The paper was discussed by Drs. Eyster, Lorenz and Dawson.

PREVENTIVE MEDICINE

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OUTLINE FOR INVESTIGATION OF DEATHS FROM DIPHTHERIA.

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To investigate deaths from diphtheria with the idea of preventing additional cases of the same affection may, upon first consideration, appear to be a paradoxical public health procedure. Moreover, it may seem that the institution of control measures is delayed until death has occurred. Such, of course, is not the case, for investigations aimed at preventing the spread of diphtheria are undertaken whenever practicable as soon as the disease is discovered. Unfortunately, many cases of diphtheria are not reported to local health officers while a still greater number fail of notification to the State Board of Health. Obviously, lack of knowledge as to the location of these patients is one of the most serious handicaps to effective control. Another obstacle is the lack of trained public health workers who can successfully cope with such a situation. In an increasingly large number of fatal cases medical aid is summoned for the first time just prior to death, thereby imposing a most formidable handicap upon the efforts of the health authorities to afford adequate protection against a preventable disease. The Wisconsin State Board of Health regards a death from diphtheria both as a disgrace and a reflection upon the community's sense of responsibility. Moreover, the Board feels that it would be

derelict in its duty should diphtheria deaths go unchallenged.

For several years it has been apparent that the annual death rates per 100,000 population from diphtheria in Wisconsin have been steadily increasing. This was particularly true in 1920 when the rate was higher than during any of the previous 8 years. Considering the readiness with which confirmatory diagnoses may be obtained from the laboratory and the effectiveness of the antitoxin treatment, it is apparent that many lives, usually of children, are being sacrificed unnecessarily. The increase in the death rates is indicated in Table 1. The death rates per 100,000 population in the registration area are included in this table for purposes of comparison. It will be seen that rates in the registration area have been uniformly higher than in Wisconsin. Furthermore, while the rates in the registration area are decreasing those in Wisconsin are increasing.

TABLE 1.

NUMBER OF REPORTED CASES AND DEATHS FROM DIPHTHERIA IN WISCONSIN WITH ANNUAL DEATH RATES PER 100,000 POPULATION IN WISCONSIN AND UNITED STATES REGISTRATION AREA FROM THE YEAR 1910 TO 1919.

			Death rates per 100,000 Population	
Years	Reported Cases in Wisconsin	Reported Deaths in Wisconsin	Wisconsin	Registration Area
1910	2457	429	18.4	21.4
1911	2287	332	14.1	18.9
1912	1913	279	11.7	18.2
1913	2283	293	12.2	18.8
1914	2767	328	13.5	17.9
1915	1704	204	8.4	15.7
1916	1981	221	8.9	14.5
1917	2520	347	13.9	16.5
1918	1774	271	10.7	13.8
1919	2184	293	11.5	....
1920	3485	365	13.9	....

As one of the means of reducing sickness and death from diphtheria it has been decided to make a careful investigation of each death recorded in Wisconsin. As soon as a death certificate from this cause is filed with the State Board of Health a literal transcript is made and sent to the deputy state health officer in whose district the fatality occurred. These deputies, of whom there are five, proceed as soon as practicable to the locality indicated and institute an investigation. In order that each investigation may proceed along uniform lines and cover the more essential phases of the subject, a form for recording data has been prepared. Accompanying this form is a set of instructions intended not only to serve as a guide but also to provide material for educational purposes. The form for recording data follows:

FORM 1.

NUMBER—— INVESTIGATION OF DEATH FROM DIPHTHERIA

1.
Name of deceased.....Age.....Sex.....
Date of death.....Causes of death.....
County .....Place.....Street Number.....
Attending physician.....Residence .....
2.
a. Case report, when....by whom..how promptly
b. How long physician was in attendance.....
c. Cultures, when taken from patient.....
From members of family.....
d. Antitoxin....kind ....number of doses.....
size of each.....when given.....
e. General treatment and nursing.....
f. Disinfection.....kind ..... efficiency.
g. Quarantine .....length and efficiency.
3.
CONCLUSION—
a. Source of infection .....
b. Responsibility for death.....
c. Spread of infection to others.....
4.
ACTION TAKEN—
a. Explanation, reprimand or prosecution of Attending physician ..Health Officer.. Nurse .....Head of family.....Other persons.
b. Publicity through
Press notices, public addresses, placards, literature, etc. Meetings with clubs, societies, officials, etc.
5.
Recommendations for further action. Remarks.

INSTRUCTIONS FOR DEPUTY STATE HEALTH OFFICERS IN WISCONSIN.

A METHOD OF CONDUCTING AN INVESTIGATION OF A DEATH FROM DIPHTHERIA.

In order that the investigations of diphtheria deaths may serve the purposes for which they were intended the following explanatory notes have

been prepared. The items on the report sheet have been selected with deliberation and after a careful study of the requirements of the situation. Therefore, unless complete information is obtained concerning each item on the sheet the investigations will fail to achieve results.

Briefly stated the purposes of each diphtheria death investigation are two:

1. To fix, in so far as possible, the responsibility for each death.

2. To prevent, in so far as possible, another death from diphtheria in the same community through the omission of certain fundamental precautions.

It will be noted that the investigation form is divided into 5 sections, in each of which correlated data is included.

1. GENERAL INFORMATION.

All of the items in this section are easily understood and require little if any explanation. Moreover, this data is readily obtainable either from the transcript of the death certificate or by inquiry. Names, dates and places should be verified.

2. PUBLIC HEALTH INFORMATION.

a. CASE REPORT, (when) the exact date of the report *to the local health officer* is desired.

(by whom), The name of person reporting is desired.

(how promptly), The number of hours or days which elapsed between the time of the first visit, diagnosis or discovery of the case and the time of the report to the local health officer should be stated in this place.

This data is important as indicating the speed with which control measures are inaugurated.

IMPORTANCE OF MORBIDITY REGISTRATION.

Next to early diagnosis, the prompt reporting of communicable diseases is undoubtedly the most important measure bearing upon the prevention and control of communicable diseases. An accurate diagnosis alone does little more than suggest to the medical attendant the appropriate line of treatment for the individual who is ill. Obviously the health machinery whereby the spread of disease is limited or prevented can not be put into motion until the presence of the disease is made known to the local health officer.

The prompt submission of a report enables the health officer to placard the infected home immediately so that the general public may avoid contact with the sick. It also affords an opportunity for the more effective isolation of the patient and the instruction of the members of the household in the care of the sick. Knowledge of where the sick are located also enables health authorities to send to the homes instructive literature. In many instances it is also practicable to send similar literature to persons residing in the neighborhood so that they may acquire definite knowledge of the character of the disease.

If every case of communicable disease or suspected communicable disease were promptly reported to the local health officer and the prescribed measures immediately applied, there would be scant opportunity for such maladies to spread.

In view of the importance of prompt morbidity reporting, the investigation should include a careful survey of the circumstances surrounding the case in question so that the responsibility for negligence in this particular may be definitely fixed.

c. CULTURES (One of the most important items.)

(when taken from patient) The date or dates of taking cultures are desired. This is essential as showing unnecessary delay in confirming or securing a diagnosis. The name and location of the laboratory in which the cultures were examined should be stated.

(from members of family) It is a matter of vital public health interest to learn whether cultures were taken from all contacts and what were the results in each case. The administration of immunizing doses of antitoxin to contacts does not meet the requirements as diphtheria bacilli may persist after this treatment. Therefore, cultures from the noses and throats of all contacts should be demanded. In Wisconsin one negative culture is required for the release of contacts.

d. ANTITOXIN. The items under this heading are self explanatory. Notations should be made as to whether the antitoxin was administered subcutaneously, intramuscularly or intravenously.

e. GENERAL TREATMENT AND NURSING. This refers to the efficiency of the general treatment and nursing care of the patient, whether supportive treatment was prescribed, whether local treatment was used and whether the attendants were cautioned to keep the patient constantly in the recumbent position so that cardiac failure might be avoided.

f. DISINFECTION. Under this item it is desired to learn the nature and effectiveness of 1, concurrent disinfection and 2, terminal disinfection. The kind of disinfecting materials used, the quantities, the length of time the disinfection was carried on, whether doors and windows were sealed and whether the disinfection was performed by a person skilled in such work should likewise be determined and the necessary educational measures instituted.

g. QUARANTINE. How soon after discovery or diagnosis of the case was quarantine instituted? How long was quarantine maintained? Was the quarantine observed? Were legal placards and quarantine notices used?

3. CONCLUSIONS.

a. SOURCE OF INFECTION. Whenever possible, careful inquiry and investigation should be made, especially among members of the family in which the death occurred, for the purpose of learning where the disease was contracted. It is frequently possible to locate unreported previous cases and actual carriers in this manner.

b. RESPONSIBILITY FOR DEATHS. A conclusion should only be reached after a careful consideration of all the facts. Responsible heads of families, other individuals in the family, physicians or health officers are the principal persons concerned.

c. SPREAD OF INFECTION TO OTHERS. An answer to this question should only be given after an examination of the morbidity and mortality statistics and a consideration of the local disease conditions.

4. ACTION TAKEN.

The investigation will fail of its manifest intent unless precautions are taken to prevent additional cases and premature deaths from diphtheria in the community. The action taken should be based upon a consideration of the factors involved, stressing particularly the remedial measures which are applicable to the local needs. In determining the reasons for the fatality under investigation the following factors are concerned:

1. Failure to summon a physician or getting one so late that decisive action could not be taken.

2. Failure to regard sore throat as a potentially dangerous condition.

3. Failure of the physician to make a diagnosis.

4. Failure to administer antitoxin sufficiently early or in ample quantity.

These factors will be considered in the order in which they have been given.

1. FAILURE TO SUMMON PHYSICIAN.

In many instances physicians are not summoned until the patients are moribund. In others, the medical attendants are not called until the untreated disease has made headway which it is difficult to overcome. The deduction to be made is obvious. Education of the people to the necessity for summoning physicians early and promptly whenever suspicious illness exists is of vital importance. This is not easy of accomplishment but must take the form of repeated and earnest popular propaganda. It is useless to attempt to drive this lesson home in a bereaved family, for here it has already been learned. However, there are other families in the community which can well afford to profit by such a harrowing experience.

2. A SORE THROAT REGARDED LIGHTLY.

The failure to regard a suspicious illness, especially one accompanied by a sore throat, as worthy of careful investigation, is responsible for many unnecessary deaths. Nor is the laity alone to blame for this condition. Physicians frequently make light of a sore throat, overlooking the fact that this symptom may give warning of diphtheria, scarlet fever, septic sore throat, Vincent's angina or other conditions requiring control measures. Therefore, far from being a trivial ailment, a sore throat should invariably be regarded with suspicion until it is proven otherwise. At the same time other evidences of indisposition such as fever, restlessness, croupy cough, malaise, irritability and the like should also be viewed with concern. While such symptoms may prove merely to indicate trivial and shortlived ailments this should not be taken for granted. The evidence so far accumulated shows that many diphtheria deaths are due to the failure of physicians and parents to develop and maintain a suspicious nature. Prompt action should be taken to insure, in so far as practicable, a correct diagnosis and efficient treatment. This is especially necessary because of the readiness with which the affection is spread. In combatting the tendency to regard a sore throat as an insignificant symptom, educational measures are strongly indicated both for professional and lay people.

3. FAILURE TO DIAGNOSE.

There appears to be a peculiar reluctance on the part of some physicians to utilize the laboratory as an aide in the diagnosis of diphtheria. However, no time should be lost in obtaining cultures from the noses and throats of patients having sore throats or presenting symptoms suspicious of diphtheria. At the same time, too great reliance should not be placed upon negative laboratory findings in the presence of symptoms clinically positive of diphtheria. It is now well known that diphtheria bacilli are not constantly found in the cultures obtained from the noses and throats of persons having the disease. In many instances this is undoubtedly due to faulty technique in obtaining the specimens. In any event, when symptoms of diphtheria are present treatment should begin at once, even though the bacteriological findings are negative.

The investigation should include a careful survey of the facilities for obtaining culture tubes, the time required in shipping the tubes to diagnostic laboratories, the time consumed in obtaining reports and the efficiency of the laboratory making the examination. Whenever possible physicians and health officers should be provided with culture tubes and instructed in the proper method of taking specimens. Although specific directions for obtaining cultures are placed in each culture outfit it is known that frequently these are not read.

Recent studies have shown that an unduly small percentage of release cultures are taken. As a consequence many diphtheria "carriers" are undoubtedly at large. The rules of the State Board of Health specifically require that 2 negative cultures taken not less than 24 hours apart must be secured before releasing from quarantine either carriers or persons who have had diphtheria. Furthermore, at least one negative culture must be obtained from each "contact." Unfortunately, many physicians and health officers profess not to be conversant with these requirements. Therefore, prior to leaving a community the investigator should explain the proper procedure to each physician in person and supply a copy of the latest printed rules.

4. ANTITOXIN.

The idea that diphtheria antitoxin is harmful and frequently gives rise to such untoward symptoms as paralysis is one that must be combatted vigorously. It must be made plain that aside from transient urticarial rashes that paralysis and other distressing conditions result from the action of the toxins generated by the causative agent of diphtheria. In support of this contention it may be pointed out that such symptoms occur when no antitoxin has been used.

The question of expense incurred in purchasing antitoxin is one that is frequently raised by physicians and governing officials. It is greatly to be regretted that monetary considerations are permitted to influence proper treatment, thereby causing unnecessary suffering or premature death. Those who raise this point should have their attention directed rather forcibly to the provision in the Wisconsin statutes which requires the local board of health to furnish free antitoxin for the treatment of those who can not afford to purchase the remedy.

When there is the slightest suspicion that the affection under treatment is diphtheria the patient should have the benefit of the doubt and antitoxin as well. While awaiting the laboratory report it is essential that antitoxin be given in suspicious cases. The skilled physician can often decide which cases are serious and which are unimportant but such judgments are not infallible. Therefore, it is better to err a few times on the side of overzealousness by administering antitoxin in non-diphtheritic affections than to prolong an illness from diphtheria or be an accessory to the patient's death by withholding the highly efficient treatment.

METHOD OF ADMINISTRATION OF ANTITOXIN.

The principal methods of administering antitoxin are:

1. The intravenous, by which absorption is approximately 10 times as rapid as the subcutaneous route.

2. The intramuscular, by which the absorption is approximately 4 times as rapid as the subcutaneous route.

3. The subcutaneous, which is the method commonly used. Ordinarily subcutaneous administration of antitoxin is sufficient to control the disease. However, in late or particularly toxic cases, the intravenous method should be employed whenever practicable. One of the obstacles to the more general use of this method is the difficulty frequently encountered in entering the veins, the

majority of the patients being children. Some practitioners are now administering a portion of the dose of antitoxin intravenously while the remaining and larger portion is given subcutaneously. The method employed will depend largely upon the circumstances. Thus, the more severe the illness the greater is the need for placing in the circulation large quantities of antitoxin with the least possible delay.

ANAPHYLAXIS.

Inquiry should invariably be made as to whether the patient has previously received injections of antitoxins or serums. When a positive history is obtained and an opportunity is afforded, desensitization should be practiced. However, no time should be lost in administering ample quantities of antitoxin when the patient is in manifest need of such treatment even though biologic preparations of animal origin have previously been used. Diphtheria kills much more frequently than does anaphylactic shock.

While a large number of antitoxin distributors have been designated in various parts of Wisconsin it is apparent that difficulty is frequently encountered in securing supplies. The investigation should therefore include a survey of the facilities for obtaining, storing and distributing supplies of antitoxin at contract prices.

The importance of giving antitoxin early can not be too strongly stressed. Reliable statistics show that when antitoxin is given early in the disease that the accompanying mortality is notably lower than when the remedy is used later. This fact is well illustrated in the experience with the disease in Philadelphia during the 5-year period from 1910-1914. From the following table it will be seen that the mortality from diphtheria progressively increases with the duration of the disease, even when antitoxin is used in ample quantities.

TABLE 2.

CASE-FATALITY RATIOS IN DIPHTHERIA (NUMBER OF DEATHS IN EACH 100 CASES) IN PHILADELPHIA, PA., FROM 1910-1914, ACCORDING TO THE DURATION OF THE DISEASE, ANTITOXIN BEING USED IN EACH CASE.

Day of Disease	Case-Fatality Ratio
1	1.1
2	5.6
3	6.8
4	7.7
5	9.2
6	9.3
7	11.4

It may be stated authoritatively, therefore, that the most important single factor in preventing prolonged illness and death from diphtheria is the early and ample administration of antitoxin.

DOSAGE OF ANTITOXIN.

Antitoxin may be given in divided doses or in a single massive dose. Each method has its advocates, who base their claims upon the striking results attained. The fact that both methods succeed is merely an impressive argument in favor of prompt and adequate antitoxin treatment, whatever the general plan of administration.

It is difficult to state how much antitoxin a diphtheria patient should receive. Some able practitioners achieve satisfactory results by using a total quantity ranging between 10,000 and 50,000 units. There are others who frequently use as high as 150,000 or more units in a single case. The use of a single massive dose instead of repeated small doses appears to be assuming popularity among physicians. The futility of expecting results when less than 5000 units are administered in actual cases of diphtheria, even when the patients are small children, is becoming widely recognized. In the absence of a definite means of determining the dosage required the patient's condition is ordinarily the best guide. Failure to show marked and early improvement should be met by the use of additional and still larger doses of antitoxin.

PROPHYLAXIS.

The means of preventing diphtheria are fully as reliable and efficient as those of a curative character. Special emphasis should be placed upon the application of the Schick test and the immunization by the toxin- antitoxin mixture of those who respond positively. The value of immunizing doses of antitoxin in persons exposed to diphtheria should not be overlooked when the disease has made its appearance and the Schick test has not previously been used. However, the administration of immunizing doses does not preclude the necessity for culturing the noses and throats of all persons who have been in contact with "carriers" or those who have been ill with diphtheria.

4. ACTION TAKEN.

a. EXPLANATION, REPRIMAND OR PROSECUTION.

It is intended, of course, that these matters be handled diplomatically and thoroughly but firmly. Prior to beginning a prosecution a full statement should be placed before the State Health Officer and his approval of the proposed action obtained.

b. PUBLICITY.

No occasion for driving home the lessons learned from the investigation should be overlooked. The least that can be done, after all persons concerned have been interviewed and the facts digested is to insert in the local press several "stories" emphasizing the necessity for early summoning of family physicians upon the appearance of sickness in the family. In addition it is usually possible to arrange for addresses before the medical society, schools and before various civic organizations in the community. While emphasizing diphtheria prevention and control the prevention and control of other communicable diseases should also receive a share of attention.

5. RECOMMENDATIONS FOR FURTHER ACTION.

Under this heading may be included action which is not included in section 4. Thus, it may be desirable to recommend that a new health officer be appointed, that all physicians be circularized repeatedly concerning the prevention and control of diphtheria or that a local public health nurse be employed. A brief history of the circumstances surrounding each death should be written on the reverse side of the data sheet.

The data obtained during the investigation of diphtheria deaths will undoubtedly serve several useful purposes: 1. Instances of neglect to apply accepted public health procedures or to assume responsibility will be indicated; 2. Communities will be fortified against additional invasions of the disease, and 3. Weaknesses in the methods of combatting diphtheria will be revealed and corrected.

SMALLPOX IN MADISON.

The unusual prevalence of smallpox in Madison has prompted the Dane County Medical Society to advise strongly more general vaccination. After discussing the local situation at its last meeting the members of the society unanimously went on record as warning those who have not been vaccinated recently and successfully to avail themselves immediately of the known protection against smallpox offered by this measure.

The reason for the society's action may be more readily understood after a perusal of the official records of the local health department. During the year 1920 there were reported to the health department 49 cases of smallpox, 20 of which occurred during December. Since January, 1921, there has been a steady increase in the number of smallpox cases as shown in the following summary:

Months	Number of cases
December, 1920	20
January, 1921	20
February	37
March (2 weeks)	28

Of the 28 cases reported during the first 2 weeks of March, 23 cases occurred during the week ending March 12th, indicating very plainly an increasing incidence of smallpox. It will be noted further that 85 cases of smallpox have already been reported in Madison in 1921, a number far exceeding the total recorded in 1920. One death from smallpox has already been certified in Madison.

In view of the unusual prevalence of smallpox, the medical society strongly urges that all persons who have not been recently and successfully vaccinated obtain this protection at once. Ordinarily the first vaccination should be performed when a child is between one and two years of age. The procedure should then be repeated just before the child begins school for the first time. Thereafter it is wise to revaccinate when smallpox is unduly prevalent in a community.

In considering the immediate and remote effects of vaccination it may be recalled that 5 millions of men and women in the United States Army were vaccinated during the Great War without a single death or serious result. There is no reason to believe that the results in Madison, while on a smaller scale, would be any less favorable. All things considered, the Dane County Medical Society advocates vaccination as a prophylactic measure of high standing and proven efficiency against a most loathsome disease.

FREE CANCER BULLETIN TO PHYSICIANS.

As a contribution to the nation-wide campaign against cancer the Wisconsin State Board of Health is distributing an instructive booklet en-

titled, "Cancer: Facts Every Adult Should Know." While written in popular style this 30-page brochure has considerable interest for physicians as well as laymen. Throughout this pamphlet the necessity for consulting the family physician early is emphasized and reiterated.

Among the important phases of the subject treated are chapters devoted to the prevalence of cancer, with a comparison of other causes of death. Under this heading is included an interesting exposition of age and sex incidence. There are also discussed three kinds of needless worry associated with cancer, 1st, whether cancer is contagious; 2nd, whether cancer is inherited and 3rd, whether cancer is a "blood disease."

The fact that cancer often arises from long continued irritation of various kinds is also treated. Moreover, the chief danger signals of cancer of the breast, uterus, intestines, stomach and skin are likewise emphasized. The fact that cancer is frequently insidious and painless in onset is pointed out and the need for early, thorough and competent examination enjoined.

The booklet concludes with a severe arraignment of cancer "cures" and quacks, particularly condemning the use of drugs and pastes. Offsetting the useless procedures the early employment of conscientious and skilled physicians who will undertake complete examinations is heartily advocated.

The State Board of Health has a copy of this instructive booklet for each physician who is sufficiently interested to write for it. A post card request addressed to the State Board of Health, Madison, Wisconsin, will bring the pamphlet without charge to any physician in Wisconsin. Furthermore, copies will be sent without cost to patients of physicians who will make written requests.

NOTICE TO PHYSICIANS AND DRUGGISTS.

You are advised that, under a recent ruling of the Federal Prohibition Commissioner, physicians, holding permits to prescribe intoxicating liquor, may prescribe wine in such quantities as they, in their honest judgment, deem necessary to afford relief from some known ailment to the person for whom it is prescribed.

Prescriptions for wine must be written on Government Prescription Blank, Form 1403.

Druggists, holding permits allowing the privilege of selling liquor on prescription, will be allowed to purchase wine in reasonable quantities without obtaining a permit other than the one now held by them. Such druggists may fill prescriptions for wine written on the government blank, Form 1403, in quantities designated by the physician writing the prescription as necessary for the treatment of the patient for whom the prescription is written.

The attention of doctors and druggists is invited to the fact that the Government presumes and will insist that prescriptions for wine be written and filled for bona fide medicinal purposes only, as provided by the National Prohibition Act.

THOMAS A. DELANEY,
Federal Prohibition Director.

Milwaukee, Wisconsin.

REPORTS ON NON-RESPECTABLE DISEASES.

An increase of about 30 percent in cases of venereal disease reported from all states except Nevada and the District of Columbia is shown in reports to the U. S. Public Health Service for the three months ending September 30. Seven states have laws requiring physicians to report all such cases with the names of the patient; and nearly all the other States require them to be reported without the names. The sudden jump in the number reported probably means not that the diseases have increased but that more physicians are obeying the law. Curiously enough, the reports indicate that physicians in western States are far more law abiding than those in the east. Massachusetts, for instance, with a population of 3,850,000 reports a good deal less than 3,000 cases, while Texas, with a population only one-fifth larger, reports more than 15,000 cases. Other western and eastern states show similar relations.

BEAT THE MOTHER TO CURE THE CHILD.

Among the Roumanian peasants, and particularly among the gypsies, there is a superstition that the death of a child is caused by an evil spirit having entered the body of the mother, and that beating the mother will drive out the devil and cure the child. Consequently these peasant mothers beat themselves frightfully when one of their children is ill.

Recently a doctor attached to the American Red Cross commission was called to see a Roumanian gypsy woman. She lay on a thin straw mat on the bare ground, with nothing but a tattered tent to shelter her from the cold wind. He found that she was suffering from pneumonia, but he also noticed numerous bruises on her chest, and upon inquiry was informed through an interpreter that one of her children had died two weeks earlier.

The superstition is common among the peasant folks of Roumania, and the Junior Red Cross has been carrying on a little educational propaganda on its own account to eradicate this and similar beliefs. In numerous instances, the self-inflicted chastisement has led to permanent disability. Death has been known to result from the beating. The ignorant men folk of the villages are as eager to throw the blame on the devil as the women themselves.

THE STATE MEDICAL SOCIETY OF WISCONSIN

ORGANIZED 1841

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The Wisconsin Medical Journal, Official Publication

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Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

KENOSHA COUNTY

The Kenosha County Medical Society held its regular monthly meeting, March 2, at the Elks Club, Kenosha. About twenty members were present and routine business was transacted. Dr. Arthur M. Corwin, ear, nose and throat specialist of Chicago, addressed the society on "Sinus Headaches and Colds." The discussion was led by Drs. Ashley, Ross, McCarthy and Davin.

H. M. Ripley, M. D., *Secretary.*

MILWAUKEE COUNTY

The regular meeting of the Milwaukee County Medical Society was held at the Hotel Pfister, Friday evening, March 11, at 8:30 o'clock. The question of organizing the medical profession of the county and state, after the plan followed by New York physicians which was described by Dr. J. J. O'Reilly during a recent visit, was fully discussed. Dr. H. Reineking presented a paper on "Fractures Involving the Ankle Joint," illustrating same with lantern slides. Mr. O. V. R. Smith of Parke, Davis & Company, addressed the society on "The Preparation of Sera."

The April meeting of the Society was held at the Hotel Pfister, Friday evening, April 8. The program was a purely scientific one and the following papers were presented: "Digestive Tract Lesions—X-ray and Operative Findings," by Dr. L. F. Jermain, and "Diagnosis and Treatment of Chronic Lesions of the Hip Joint," by Dr. F. J. Gaenslen. Both papers were illustrated with lantern slides.

Daniel Hopkinson, M. D., *Secretary.*

MILWAUKEE MEDICAL SOCIETY

The regular meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot Building, Milwaukee, Tuesday evening, March 8. An amendment to the by-laws restricting the membership to 200 was adopted. A number of clinical cases and pathological specimens were presented after which the following program was given: "Experimental Studies on the Heart Beat and Functional Heart Diseases," by Dr. B. H. Schlomovitz of Marquette University Medical School; "Premature Cardiac Contraction," by Dr. Fred M. Smith, Chicago. Discussion of the papers was led by Drs. Rogers, Ogden, Herner and Patek.

At the regular meeting of the Milwaukee Medical Society held in the society rooms, March 22, the following scientific program was given: "Abscess of the Lung following Tonsillectomy, with Presentation of the Patient," by Dr. Frank Murphy of the Milwaukee County Hospital; "The X-ray as an Aid in Diagnosis of Chest Conditions," by Dr. G. W. Stevens of Columbia Hospital; and "The X-ray in Relation to Pulmonary Tuberculosis," by Dr. Chas. E. Ide of Muirdale Sanatorium. The discussion of these papers was opened by Drs. Ernst, Mattick, Thompson and Smith. A number of interesting clinical cases, pathological specimens and roentgenograms were presented.

Oscar Lotz, M. D., *Secretary Pro tem.*

MILWAUKEE OTO-OPHTHALMIC SOCIETY

The Milwaukee Oto-Ophthalmic Society held its regular meeting in the rooms of the Milwaukee Medical Society in the Colby-Abbot Building, Tuesday evening, March 15. Noteworthy developments in medical science made by various countries during the war were described by Dr. Franz Pfister, who has recently returned from a tour of Europe. Dr. C. S. Beebe presented a paper on "Interocular Hemorrhages."

MONROE COUNTY

A meeting of the Monroe County Medical Society was held at the State Public School, Sparta, the evening of February 22nd, after a supper at the Sidney Hotel. Dr. Chauncey Beebe of Sparta gave a report of the year's work at the State Public School on the Schick test for diphtheria and on the inoculations for diphtheria immunity. Reactions in various stages of the Schick test were demonstrated on twenty-three children by Dr. Beebe and Dr. W. D. Stovall of the State Laboratory of Hygiene. Dr. Stovall addressed the society on "Membranous and Non-membranous Infections of the Nose and Throat," following which a round-table discussion was held. Eighteen physicians attended the meeting, five of whom were from La Crosse County and one from Juneau County.

L. H. Prince, M. D., *Secretary.*

OUTAGAMIE COUNTY

The regular meeting of the Outagamie County Medical Society was held at the Y. M. C. A. Building, Appleton, March 23, following a supper at 6:30 P. M. The following papers were presented in a very creditable manner and enjoyed by all in attendance: "Some Common Disturbances of the Female Pelvic Organs—Their Cause and Treatment," by Dr. Geo. N. Pratt, and "Encephalitis Lethargica," by Dr. C. G. Maes.

V. F. Marshall, M. D., *Secretary.*

ROCK COUNTY

The Rock County Medical Society held a clinic meeting at the Mercy Hospital, Janesville, February 22nd. Clinics were held in four operating rooms from one until six o'clock. After a dinner at the hospital, an evening program was carried out, consisting of a talk on "Recent Advances in the Use of the X-ray," by Mr. Willis of Janesville, and a paper on "Tuberculosis of the Hip," by Dr. Vincent W. Koch, with presentation of cases by Drs. Koch and Sutherland. About fifty members attended the afternoon and evening meetings.

E. B. Brown, M. D., *Secretary.*

WISCONSIN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

At a meeting of the Wisconsin Association of Industrial Physicians and Surgeons held at the Milwaukee

Athletic Club, Milwaukee, Saturday afternoon, March 12, Dr. S. H. Wetzler presented a paper on "Subconscious Injuries to the Abdomenal Viscera," and Dr. A. L. Curtin presented one on the "Management and Treatment of Head Injuries in Industry." About twenty-five members from the city and state attended the meeting.

ASSOCIATION NEWS

SEVENTH ANNUAL MEETING OF THE WISCONSIN SURGICAL ASSOCIATION,

Marshfield, Wis., May 18 and 19, 1921.

PROGRAM MAY 18, 1921.

Evening Session, Adler Theater, 7:15 P. M.

Invocation.....Rev. Frank Zimmermann
Naming of Committee on Election of Officers.
Naming of Committee for Receiving Applications for Membership.
Address of Welcome.....Hon. G. B. Campbell, Mayor
Address.....Hon. J. J. Blaine, Governor of Wisconsin
President's Address .....
..Dr. K. W. Doege, M. D., F. A. C. S., Marshfield, Wis.
Address: "Goitre".....
Dr. Willard Bartlett, M. D., F. A. C. S., St. Louis, Mo.
Address: "Tumors of Bones," Illustrated.....
..Dr. B. D. Phemister, M. D., F. A. C. S., Chicago, Ill.

Clinic Demonstrations: St. Joseph's Hospital,

Hall A.

9- 9:50 A. M. "Tuberculosis of the Kidney," Illustrated. Dr. W. G. Sexton, Marshfield, Wis.
10-10:50 A. M. "The 'Potter' Bucky, Diaphragm," Dr. R. P. Potter, Marshfield, Wis.
11-11:50 A. M. "Cancer of the Rectum," Illustrated, Dr. K. W. Doege, Marshfield, Wis.
2- 2:50 P. M. "Clinic in Reading X-Ray Plates Presenting Unusual Diagnostic Points," Dr. C. A. Fortier, Milwaukee, Wis.
3- 3:50 P. M. "What Laboratory Investigation Has Done To Solve the Cancer Problem," Dr. W. E. Ground, Superior, Wis.
4- 4:50 P. M. "Hypospadias," Dr. E. A. Fletcher, Milwaukee, Wis.

Hall B.

9- 9:50 A. M. "Management of Operative Pediatric Cases," Dr. J. B. Vedder, Marshfield, Wis.
10-10:50 A. M. "Blood Pressure in Relation to Surgery," Dr. H. H. Milbee, Marshfield, Wis.
11-11:50 A. M. "Tumors of the Breast," Illustrated, Dr. H. A. Vedder, Marshfield, Wis.
2- 2:50 P. M. "A Plea for the Gridiron Incision in Appendicitis," Dr. V. A. Marshall, Appleton, Wis.
3- 3:50 P. M. "Peripheral Nerve Injuries," Illustrated, Dr. Merritt Jones, Wausau, Wis.
4- 4:50 P. M. "Results of the Treatment of Fractures by the Closed Method," Dr. C. J. Combs, Oshkosh, Wis.

Hall C.

9- 9:50 A. M. "Gastric Hemorrhages," Dr. F. E. Turgasen, Marshfield, Wis.
10-10:50 A. M. "Technique of Local Anesthesia in Goitre," Illustrated, Dr. K. W. Doege, Marshfield, Wis.
11-11:50 A. M. "Duodenal Tube in the Diagnosis of Gall Bladder and Gall Duct Disease," Illustrated, Dr. K. H. Doege, Marshfield, Wis.
2- 2:50 P. M. "Some Problems in Group Practice of Medicine," Dr. J. M. Dodd, Ashland, Wis.
3- 3:50 P. M. "Chondroma of Bones," Illustrated, Dr W. C. Witte, Milwaukee, Wis.
4- 4:50 P. M. "Clinical Laboratories a Correlating Teaching Unit," Dr. B. F. McGrath, Milwaukee, Wis.

Hall D.

9- 9:50 A. M. "Light Therapy," Illustrated, Dr. K. H. Doege, Marshfield, Wis.
10-10:50 A. M. "Basal Metabolism," Illustrated. Dr F. E. Turgasen, Marshfield, Wis.
11-11:50 A. M. "Pyuria," Dr. W. G. Sexton, Marshfield Wis.
2- 2:50 P. M. "Giant Duodenum with Report of Cases," Dr. H. F. Derge, Eau Claire, Wis.
3- 3:50 P. M. "Goitre Technique," Dr. Arthur Sullivan, Madison, Wis.
4- 4:50 P. M. "What Can Be Done in Lung Surgery," Dr. J. L. Yates, Milwaukee, Wis.

Hall E.

9- 9:50 A. M. "Acute Surgical Abdomen," Dr. H. A. Vedder, Marshfield, Wis.
10-10:50 A. M. "Acute and Chronic Cranial Injuries," Illustrated, Dr. V. A. Mason, Marshfield, Wis.
11-11:50 A. M. "Some of the Pathological Conditions Found Within the Chest," Illustrated, Dr. R. P. Potter, Marshfield, Wis.
2- 2:50 P. M. "Results of Open Treatment of Fractures," Illustrated, Dr. Jos. F. Smith, Wausau, Wis.
3- 3:50 P. M. "Ectopic Gestation Associated with Some Abnormalities," Dr. S. E. Williams, Chippewa Falls, Wis.
4- 4:50 P. M. "Chronic Abscess of the Lung," Illustrated, Dr. E. L. Mason, Eau Claire, Wis.

Hall F

EYE, EAR, NOSE AND THROAT.

9 A M to 12 M.

Paper: Title to be Announced Later. Dr. C. J. M. Coffey, Milwaukee, Wis.
"Report of a Case of Panophthalmitis of Endogenous Origin," Dr. F. S. Cook, Eau Claire, Wis.

"Direct Laryngoscopy," Dr. H. B. Hitz, Milwaukee, Wis.
"Surgical Tonsil," Illustrated, Dr. Wm. Hipke, Marshfield, Wis.
"Some Unusual Nasal Disturbances Frequently Overlooked, Dr. M. P. Andrews, Manitowoc, Wis.

2 P. M. to 5 P. M.

Paper: Title to be announced later. Dr. Wm. Comee, Green Bay, Wis.
Paper: Title to be announced later, Dr. W. E. Grove, Milwaukee, Wis.
"Uncommon Cases of Exophthalmos," Dr. H. J. Heeb, Milwaukee, Wis.
Address: "The Present Status of Keratoplasty," Dr. Harry S. Gradle, Chicago, Ill.

PROGRAM, MAY 19, 1921.
Evening Session, Armory, 6 P. M.—Banquet.

Eleetion of Offieers.
Election of New Members.
Address: Dr. Horace Manchester Brown, Milwaukee, Wis.

ST. JOSEPH'S HOSPITAL, MARSHFIELD, MEETING PLACE WISCONSIN SURGICAL ASS'N.

Address: "Influence of Ureteral Strictures on Other Urinary Tract Lesions," Dr. Guy L. Hunter, M. D., F. A. C. S., Baltimore, Md.
Address: "Surgical Treatment of Gastric and Duodenal Ulcers," Dr. Alfred A. Strauss, M. D., F. A. C. S., Chicago, Ill.

Clinic Demonstrations: St. Joseph's Hospital,

Hall A.

9- 9:50 A. M. "Uses of the Electrocardiograph in Surgery," Dr. H. H. Milbee, Marshfield, Wis.
10-10:50 A. M. "Clinical Significance of Serous Effusions," Dr. K. H. Doege, Marshfield, Wis.
11-11:50 A. M. "Developmental Anomalies of the Abdomen and Their Surgieal Significance," Illustrated, Dr. V. A. Mason, Marshfield, Wis.
2- 2:50 P. M. "Infantile Paralysis," Dr. F. J. Gaenslen, Milwaukee, Wis.
3- 3:50 P. M. "X-Ray in Surgical Conditions of the Abdomen," Illustrated, Dr. Hollis Potter, Chicago, Ill.
4- 4:50 P. M. "Some Observations in the Treatment of Cleft Palate and Harelip," Illustrated, Dr. M. H. Federspiel, Milwaukee, Wis.

Hall B.

9- 9:50 A. M. "Thymus Gland Enlargement in Children, Illustrated, Dr. J. B. Vedder, Marshfield, Wis.
10-10:50 A. M. "Surgical Diseases of the Colon," Dr. F. E. Turgasen, Marshfield, Wis.
11-11:50 A. M. "Relationship of the Internist to the Surgeon," Dr. H. H. Milbee, Marshfield, Wis.
2- 2:50 P. M. "Aeute Abdomen, Diagnosis and Treatment," Illustrated, Dr. D. R. Connell, Beloit, Wis.
3- 3:50 P. M. Title to be Announced Later, Drs. Pember and Nuzum, Janesville, Wis.
4- 4:50 P. M. "The Parham-Martin Bone Band in Fraetures," Illustrated, Dr. S. E. Gavin, Fond du Lac, Wis.

Hall C.

9- 9:50 A. M. "More Liberal Indications for Resection of the Stomach in Gastric Cancer," Illustrated, Dr. K. W. Doege, Marshfield, Wis.

10-10:50 A. M. "Findings that may be Overlooked Unless X-Ray Examinations are Made," Dr. R. P. Potter, Marshfield, Wis.

11-11:50 A. M. "Thyroid Diseases," Dr. F. E. Turgasen, Marshfield, Wis.

2- 2:50 P. M. "Cranial Injuries, Dr. C. A. Evans, Milwaukee, Wis.

3- 3:50 P. M. "Radium, X-Ray and Light Therapy," Dr. H. F. Foerster, Milwaukee, Wis.

4- 4:50 P. M. "Puerperal Sepsis," Dr. Clarence C. Del Marcelle, Neenah, Wis.

Hall D.

9- 9:50 A. M. "Hemorrhages of the Puerperium and Their Relation to Malignancy," Illustrated, Dr. H. A. Vedder, Marshfield, Wis.

10-10:50 A. M. "Localization of Spinal Lesions," Illustrated, Dr. V. A. Mason, Marshfield, Wis.

11-11:50 A. M. "Pyelography in Diagnosis," Illustrated, Dr. W. G. Sexton, Marshfield, Wis.

2- 2:50 P.. M. "Relationship Between Certain Intestinal Parasites and Chronic Abdominal Symptoms," Dr. F. G. Connell, Oshkosh, Wis.

3- 3:50 P. M. "An Analysis of Fifty Consecutive Deaths," Dr. Edward Evans, La Crosse, Wis.

4- 4:50 P. M. To be Announced Later.

Hall E.

9- 9:50 A. M. "Diagnosis of Pernicious Anemia, with Special Reference to the Spectroscopic Examination of Duodenal Contents," Illustrated, Dr. K. H. Doege, Marshfield, Wis.

10-10:50 A. M. "Haematuria," Illustrated, Dr. W. G. Sexton, Marshfield, Wis.

11-11:50 A. M. "Appendicitis in Children," Dr. J. B. Vedder, Marshfield, Wis.

2- 2:50 P. M. "The Clinical Significance of the Basal Metabolic Rate in Relation to Surgery of the Thyroid," Illustrated, Dr. R. H. Jackson, Madison, Wis.

3- 3:50 P. M. Title to be Announced Later, Dr. Julius J. Bellin, Green Bay, Wis.

4- 4:50 P. M. To be Announced Later.

Hall F.

EYE, EAR, NOSE AND THROAT.

9 A. M. to 12 M.

"Ocular Manifestations in Encephalitis Lethargica," with report on four cases, Dr. G. I. Hogue, Milwaukee, Wis.

"Ocular Manifestations in Cranial Injuries," Dr. Gilbert E. Seaman, Milwaukee, Wis.

"Retinal Arterio-Sclerosis," Dr. L. A. Copps, Marshfield, Wis.

"That Swelling Behind the Ear: Differential Diagrams with Particular Reference to a New X-Ray Method," Dr. Franz Pfister, Milwaukee, Wis.

"The Eye in Brain Injuries," Dr. M. N. Black, Milwaukee, Wis.

2 P. M. to 5 P. M.

Paper: Title to be Announced Later, Dr. A. J. Kreutzer, Milwaukee, Wis.

Paper: Title to be Announced Later, Dr. J. E. Guy, Milwaukee, Wis.

Address: "Some Newer Ideas in the Treatment of Sinus Disease," Dr. H. L. Pollock, Chicago, Ill.

"Cataract Operations in the Aged," Dr. Samuel G. Higgins, Milwaukee, Wis.

WISCONSIN ASSOCIATION OF INDUSTRIAL PHYSICIANS.

A meeting of the Wisconsin Association of Industrial Physicians and Surgeons was held at the Milwaukee Athletic Club, on Saturday afternoon March 12th. About twenty-five members from city and state attended.

Dr. S. H. Wetzler read a paper on "Subcutaneous Injuries to the Abdomenal Viscera, with cases." This was followed by a discussion of the paper. Dr. A. L. Curtin also read a paper on the "Management and Treatment of Head Injuries in Industry."

DR. R. E. FITZGERALD,
Secretary and Treasurer.

CORRESPONDENCE

Chicago Ill., March 5th, 1921.

Dr. Rock Sleyster, Sec'y.
Wisconsin Medical Society,
Wauwatosa, Wisconsin.

Dear Dr. Sleyster:—

The inside pages cover the tours of the A. M. A. meeting at Boston during the month of June.

The hotel situation in Boston does not look very good, but any member taking one of these trips is assured of good hotel accommodations for we have purchased our space.

Dr. Jermain of Milwaukee, wife and daughter, and Dr. Brockway of Oshkosh and wife are the only ones from Wisconsin to date that have registered. Can you not give these trips and the Medical Special De Luxe a little write up in the next issue of the Wisconsin State Journal for we would like to have a big attendance from your state, and by stirring up the necessary enthusiasm at this time, it can easily be done.

Thanking you in advance for any help you can give

us in getting a good bunch interested in the Boston trip, we are

Yours very truly,
HARLAN SPEARS TOURS,
W. H. Spears,
Business Manager Medical Tours.

THE MEDICAL SPECIAL DE LUXE.

The Medical Special de Luxe will be the finest special train ever operated in point of equipment and service. It will depart from the Central Station at 8:30 o'clock on the morning of June 5th and will make the running time to Boston in just twenty-four hours.

The Pullman equipment will be of the latest all-steel type and will consist of Observation, Club and Dining cars with standard sleeping and solid Compartment and Drawing room sleeping cars.

The Schedule:

Lv. Chicago	8:30 a. m.	June 5th
Lv. Niles	10:40 a. m.	June 5th
Lv. Kalamazoo	11:40 a. m.	June 5th
Lv. Battle Creek	11:59 a. m.	June 5th
Lv. Jackson	1:00 p. m.	June 5th
Lv. Ann Arbor	1:50 p. m.	June 5th
Lv. Detroit	2:40 p. m.	June 5th
Lv. Buffalo	9:00 p. m.	June 5th
Ar. Boston	9:30 a. m.	June 6th
Lv. Boston	7:00 p. m.	June 10th
Lv. Niagara Falls	9:15 a. m.	June 11th
Ar. Detroit	1:40 p. m.	June 11th
Ar. Chicago	8:30 p. m.	June 11th

The Rates:

The "all-expense" rate on the Special will be:

$158.98 per person per lower berth.

$167.88 per person when two occupy compartment.

$175.98 per person when two occupy drawing room.

Rates for other accommodations and from other cities will be quoted upon application.

These rates will undoubtedly be lowered by a reduction in rail rates on account of the A. M. A. meeting.

The rates quoted above include every expense excepting meals while at Boston (rooms with bath at hotels).

Special rates will be quoted persons who already have engaged hotel accommodations at Boston, or who wish to avail themselves of the de luxe service on the "Medical Special".

Return via Washington. Those persons who desire to use the Medical Special de Luxe east and return via New York, Atlantic City and Washington, with the Canadian Tour, may do so upon application.

The rate will be $220.09 per person from Chicago per lower berth. Rates for other accommodations on trains and from other cities will be quoted upon application.

The Canadian Tour will leave Chicago Thursday afternoon, June 2nd, spending a day visiting Niagara Falls and Toronto, a full day at Montreal, making the trip to Quebec and return on the St. Lawrence River steamer, with a day at Quebec and a side trip to St. Anne de Beaupre to visit the famous Catholic Shrine and Montmorency Falls. Boston will be reached on Monday evening the 6th. The return trip will be from Boston on the late afternoon of the 10th to New York City via the famous Cape Cod Canal, with a full day's visit to New York City, Atlantic City and Washington, reaching Chicago, Wednesday morning, June 15th.

The rate will be $272.70 per lower berth including every expense excepting meals while at Boston.

Rates for other accommodations and from other cities will be quoted upon request.

Canadian Tour Returning Direct. Members who desire to make the Canadian portion of the Canadian Tour returning from Boston to Chicago direct on the Medical Special, may do so upon application before departure.

The rate will be $220.09 per lower berth including every expense excepting meals while at Boston.

Golfers may leave Chicago with the Canadian Tour omitting the side trip from Montreal to Quebec, traveling direct to Boston, which point will be reached at 7:30 Sunday morning.

Rates quoted upon application.

Reservations for all tours or for Independent Travel should be secured at once by application to Harlan-Spears Tours, 20 West Jackson Blvd. A deposit of $15 per person will be required when making reservations, this amount to apply against final payment or to be refunded in full should you be forced to cancel your trip later on.

March 22, 1921.

To the Editor of the Wisconsin State Medical Journal,
Madison, Wis.

DEAR SIR:—

We enclose herewith the first letter sent out by the Committee having in charge the Minneapolis Clinic Week. We are sure the Hennepin County Medical Society will greatly appreciate any notice you may give to the forthcoming Clinic Week.

Very respectfully,
THE JOURNAL-LANCET,
By W. L. Klein.

Minneapolis, Minn., March 19, 1921.

DEAR DOCTOR:—

The fourth annual session of Minneapolis Clinic week, conducted by the Clinical Section of the Hennepin County Medical Society, will be held next month (April 25-28, inclusive).

The purpose of the Clinic is to furnish an opportunity for intensive postgraduate study for both specialists and general practitioners; to present, not only the new, but the fundamental principles of all branches of medicine, and to elevate the standards of medical practice and of service.

The occasion also furnishes visiting physicians an opportunity to meet old and to make new friends, and to enjoy a few days or evenings of recreation.

With the experience of three annual meetings of like kind, the Committee in charge feels that this year's Clinic will exceed in profit and pleasure any former session. The general plan of work this year is as fol-

lows:

Clinics in all the hospitals of the city during the morning and early afternoon hours.

A daily afternoon meeting in the Gold Room of the Radisson Hotel, when distinguished speakers from outside the city and some local men will present subjects of special and general interest.

On Tuesday evening the Academy of Ophthalmology and Oto-Laryngology will give a banquet, followed by a scientific program.

On Wednesday evening the Hennepin County Medical Society will give its annual banquet, followed by an address by a distinguished medical man.

This leaves open for general entertainment Monday and Thursday nights for all visitors, and Tuesday night for all who do not attend the Academy meeting.

Headquarters will be, as in past years, at the Radisson Hotel, and all visitors are earnestly requested to register at the Clinic booth in the hotel. (There is no fee for registration.)

Very truly,

G. Elmer Strout, M. D., *Sec'y.*

N. B.—Hotel reservations should be made at least two days in advance, either directly with the hotel or through the secretary of the Clinical Section.

NEWS ITEMS AND PERSONALS

Over $50,000 was raised in the four-day campaign of Mercy Hospital, Janesville, for funds. The sum originally set was $75,000 but the committee is much pleased with the amount raised as the showing is far better than anticipated, owing to present business conditions.

Miss Sarah J. Nelson, who was superintendent of the Isolation hospital, Madison, for five years prior to serving overseas in the Red Cross service during the war, is back at the hospital in her former capacity. She has been superintendent of the American-Norwegian hospital in Chicago since her return to this country.

The old Saint Regina Academy at Madison is being remodeled into a thirty-five bed hospital. The building, which was purchased last fall by the Methodist Hospital Association, will be ready for occupancy about May first.

Dr. Franz Pfister of Milwaukee has returned to his home after an eleven months' tour of Europe.

Mrs. E. A. Binder, recently deceased, has left a will in which she bequeaths approximately $50,000 of her estate for a hospital in Baraboo, providing the city raises a like amount. She has also left her 500-acre farm to the city, the proceeds of which are to be used as an endowment fund for the hospital for those who are not able to pay for treatment.

The committee on arrangements for the clinic to be held in Janesville the latter part of October has already started plans for a program to cover two days of diagnostic and operative work. A surgeon and internist of national reputation will be secured for the principal address. The co-operation of physicians of the surrounding counties is being requested to make this one of the largest clinics ever held in southern Wisconsin.

Dr. Russell E. Olson, for the past two years house physician at the Emergency Hospital, Milwaukee, has resigned from that staff and will engage in private practice with Dr. B. H. Oberembt in the First Wisconsin National Bank Building.

Laona's new hospital is nearing completion and will be ready for occupancy some time in May. The building will accommodate twenty patients and the cost of same will be approximately $80,000, exclusive of equipment.

Dr. G. H. Ripley of Kenosha attended the annual meeting of the Federation of State Medical Boards of the United States held at Chicago, March 9, as a delegate from the Wisconsin State Board of Medical Examiners.

Of the deaths of children 3 and 4 years of age, more than one-seventh are caused by diphtheria. In Wisconsin last year diphtheria killed one person per day. The year's mortality for the disease was 13.9 for every 100,000 people—the highest since 1910. In January this year 43 deaths were due to diphtheria.

Wisconsin penal and charitable institutions, and county jails and poor-houses are among the best in the country, investigators of the Rockfeller foundation reported to the state board of public affairs after a year's investigation. Dr. Anderson of the foundation, reporting the findings of his field force in a 25,000-word summary of their investigations, said that when compared with conditions in other states which are under investigation Wisconsin will stand near the top of the list.

DEATHS

Dr. Frank E. Stevens died at his home in Bristol, March 5, after having been in failing health for about a year. Doctor Stevens was born in Pleasant Prairie, in 1851, and early in life took up the profession of teaching. He graduated from the Oshkosh Normal School in 1875 and taught in Merrill for two years. He then took up the study of medicine with Dr. L. D. Shearer of Bristol, later entering the medical school of Northwestern University from which he graduated in 1879. He began the practice of medicine at Union Grove immediately after graduation and after four years of work there he returned to Bristol and entered partnership with Dr. Shearer, with whom he practiced until 1887, when Dr. Shearer removed from Bristol. Dr. Stevens was one of the prominent men of the country and a man who had given much to the advancement of his home town and the county. He was a member of the Kenosha County, Wisconsin State and American Medical Associations.

Dr. H. D. Squire of Sheboygan died at his home, March 1, at the age of 81 years. Dr. Squire was born at Riverhead, New York, in 1839, and moved with his parents to Rockford, Illinois, when a boy. He taught

school for three years before entering Hahnemann Medical College, from which he graduated in 1863. He then practiced medicine in McGregor, Iowa, for ten years, after which time he removed to Sheboygan where he practiced for over forty years.

Dr. Benjamin Chilson died at his home in Beloit, March 3, after an illness of a few hours. Dr. Chilson was born in Sharon in 1857 and graduated from the medical school of Iowa University in 1882. He then returned to Sharon to practice medicine and remained there until his removal to Beloit eleven years ago. He was a member of the Rock County, Wisconsin State and American Medical Associations.

Dr. W. D. Little of Maiden Rock died in a hospital at St. Paul, Minnesota, March 31. Dr. Little was born in 1868 and graduated from the Keokuk College of Physicians and Surgeons in 1887. He practiced in Boston for a time and then removed to Maiden Rock twenty-four years ago, where he practiced until the time of his death. He was a member of the Pierce County, Wisconsin State and American Medical Associations.

Mrs. H. J. Stalker, wife of Dr. H. J. Stalker of Kenosha, died Thursday morning, March 24, following an emergency operation for strangulated hernia.

"In so-called 'hot jobs' in industrial plants where high temperatures are essential" says Surgeon General Cumming, of the U. S. Public Health Service, "the heat can be greatly diminished by water-jacketing boilers, insulating blast furnaces with double walls of fire brick, and kindred devices. Where the actual temperatures in the plant cannot be much reduced great relief can be given by big electric fans. Radiant heat, which hurts the eyes, can be largely obviated by screens of wire mesh or of loosely hanging chains, through which the workmen can pass when they must approach the furnaces. Goggles, wire-mesh face masks, asbestos aprons, cork or asbestos-soled shoes all help considerably. Easily accessible drinking water never colder than 55 F., is absolutely essential to health."

PUBLIC HEALTH SERVICE WARNS CONSUMPTIVES.

Washington, Nov.—The migration of army patients suffering with tuberculosis to the semi-arid west is causing the U. S. Public Health Service no little concern, for all the Service hospitals and all the contract hospitals in that region are now completely filled. It is considered to be very unfortunate that the patients should leave places where the Government is ready and able to care for them and go to other sections where it is absolutely impossible for it to provide proper care and where even ordinary housing accommodations are largely unobtainable. The Service is making and will continue to make strenuous efforts to meet the needs of the patients, but the great amount of travel to that part of the country makes the problem very serious.

A RESEARCH INFORMATION BUREAU.

The National Research Council has established a Research Information Service as a general clearing-house and information bureau for scientific and industrial research. This "Service" on request supplies information concerning research problems, progress, laboratories, equipment, methods, publications, personnel, funds, etc.

Ordinarily inquiries are answered without charge. When this is impossible because of unusual difficulty in securing information, the inquirer is notified and supplied with an estimate of cost.

Much of the information assembled by this bureau is published promptly in the "Bulletin" or the "Reprint and Circular Series" of the National Research Council, but the purpose is to maintain complete up-to-date files in the general office of the Council.

Requests for information should be addressed, Research Information Service, National Research Council, 1701 Massachusetts Avenue, Washington, D. C.

THE CAPILLARIES AND ACIDOSIS.

Many of the products of incomplete combustion in the body are of the character of "fixed" or nonvolatile acids. When they find their way into the blood they displace carbonic acid by combining with the alkali present, and thus the alkali reserve is reduced. This is a now familiar type of acidosis which is considered an abnormal if not a relatively hazardous condition. Physiologists have often inquired where the preliminary process goes on. Is it in the liver, in the muscles, or in some other conspicuous tissue? Reasoning that a damage to the capillary walls with a resulting decrease in permeability might prevent the adjacent tissues from receiving an adequate blood and oxygen supply, Wallace and Pellini[3] have studied the effects of substances which are known to produce such harm. As a result of their experiments at the University and Bellevue Hospital Medical College, New York, they have found that uranium, cantharidin, arsenic, and diphtheria toxin, which cause widespread capillary damage, bring about a definite acidosis, as shown by a decreased concentration of bicarbonate in the blood plasma. Podophyllotoxin and emetin, which appear to have an action seemingly confined to the intestinal capillaries, do not cause acidosis. The same thing is true of hydrazin, a recognized "liver poison." If acidosis may thus be one of the effects of "capillary poisons" of the type that produce structural changes, it should follow, so the New York pharmacologists argue, that other agents which interfere with an adequate supply of oxygen to the tissues in other ways would also cause acidosis. This seems to be the case; for nitrites, which induce methemoglobin formation, and cyanids, which prevent the utilization of oxygen by the tissues, bring about a marked acidosis. As marked damage to the liver and intestine may fail to induce acidosis, and the kidney also is not a necessary factor, Wallace and Pellini believe at present that the essential condition is an injury to the capillaries of the muscle.—*Journal A. M. A.*

[3]Wallace, G. B., and Pellini, E. J.: Acidosis from Capillary Poisons, Proc. Soc. Exper. Biol. & Med. 18:115 (Jan.) 1921.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Rational Treatment of Pulmonary Tuberculosis. By Charles Sabourin, M. D., Medical Director of the Durtol Sanatorium, France. Authorized translation. 6th edition. 440 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $3.50.

Eye, Ear, Nose and Throat Nursing. By A. Edward Davis, A. M., M. D., and Beman Douglass. 2nd edition, revised. 32 illustrations. 345 pp. Philadelphia: F. A. Davis & Co. 1920. Price, $2.50.

Practical Psychiatry and Psychology. By C. B. Burr, M. D. 5th edition. Revised and enlarged. Illustrated. 269 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $2.00.

Mother and Child. By Edw. P. Davis, A. M., M. D., Professor of Obstetrics, Jefferson Medical College. 4th edition. 278 pp. Philadelphia: J. B. Lippincott & Co. 1921. Price, $2.75.

Epidemic Respiratory Disease. By Drs. E. L. Opie, F. G. Blake, James C. Small and T. M. Rivers. Illustrated. 402 pp. St. Louis: C. V. Mosby Co. 1921. Price, $6.50.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M. D., Attending Surgeon to the City Hospital and to St. Bartholomew's Hospital, New York City. 3d edition, entirely reset. Octavo of 894 pages. 892 illustrations, mostly original. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $8.00 net.

Transactions of the College of Physicians of Philadelphia. 3d edition. Vol. 41. Containing the papers read before the College from January, 1919, to December, 1919, inc. Published in part by the income from the Francis Houston Wyeth fund.

Keen's Surgery. Edited by W. W. Keen, M. D., LL. D., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 855 pp. 359 illustrations, 17 in color. Philadelphia and London: W. B. Saunders Co. 1921.

Regional Anaesthesia. (Victor Pauchet's Technique.) By B. Sherwood Dunn, M. D., Officer D'Academie, Surgeon Service de Santé Militaire de Paris. 224 figures in the text. Philadelphia: F. A. Davis & Co. 1921. Price, $4.00.

The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russel D. Carman, M. D., Head of Section of Roentgenology in the Division of Medicine, Mayo Clinic and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota. Second edition, thoroughly revised. Octavo of 676 pages with 626 original illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $8.50 net.

A Laboratory Manual and Text-Book of Embryology. By Charles W. Prentiss, Late Professor of Microscopic Anatomy, Northwestern University Medical School, Chicago. Revised and rewritten by Leslie B. Arey, Professor of Microscopic Anatomy, Northwestern University Medical School. Third edition, enlarged. Octavo volume of 412 pages with 388 illustrations, many in color. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $5.50 net.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine Graduate School of Medicine, University of Pennsylvania. Fourteenth edition, thoroughly revised with the assistance of John H. Musser, Jr., M. D., Associate in Medicine, University of Pennsylvania. Octavo of 1,284 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London. 1920. Cloth, $10.00 net.

The Practical Medicine Series. Under the general editorial charge of Charles L. Mix, A. M., M. D., 304 S. Dearborn St., Chicago: The Year Book Publishers. **Vol. II. General Surgery.** Edited by Albert J. Ochsner, M. D., F. A. C. S. 620 pages, illustrated. Price, $2.50. **Vol. III. The Eye, Ear, Nose and Throat.** Edited by Casey A. Wood, M. D., Albert H. Andrews, M. D., and Geo. E. Shambaugh, M. D. 380 pages, illustrated. Price, $1.75. **Vol. IV. Pediatrics.** Edited by Isaac A. Abt, and **Orthopedic Surgery,** edited by Edw. W. Ryerson, M. D. 256 pages, illustrated. Price, $1.75.

Pulmonary Tuberculosis. Handbook for Students and Practitioners. By Edw. O. Otis, A. B., M. D. Second edition. W. M. Leonnard, Publisher, Boston. 1920. Price, $3.50.

The Form and Functions of the Central Nervous System. An Introduction to the Study of Nervous Diseases. By Frederick Tilney, M. D., Ph. D., Prof. Neurology, Columbia Univ., and Henry A. Riley, A. M., M. D., Associate in Neurology, Columbia Univ. Foreword by Geo. S. Huntington, Sc. D., M. D., Prof. Anatomy, Columbia Univ. 591 figures containing 763 illustrations, 56 colored. Paul B. Hoeber, publisher, New York. Price, $12.00.

A Textbook of Pathology. By Wm. G. MacCallum, M. D., Professor of Pathology and Bacteriology, Johns Hopkins Univ. 2nd edition, thoroughly revised. Octavo volume of 1155 pages. 575 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $10.00 net.

The New Psychology and Its Relation to Life. By A. G. Tansley. 283 pages. New York: Dodd, Mead and Co. 1920.

The Anatomy of the Nervous System. From the Standpoint of Development and Function. By Stephen W. Ranson, M. D., Ph. D., Professor of Anatomy in Northwestern Univ. Medical School, Chicago. Octavo volume of 395 pages. 260 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $6.50 net.

The Wassermann Test. By Charles F. Craig, M. A., M. D., F. A. C. S., Lt. Col., M. C., U. S. A., Professor of Bacteriology, Army Medical School, Washington, D. C. Second edition, revised and enlarged. Illustrated with colored plates, halftone plates and 61 tables. St. Louis: C. V. Mosby Co. 1921. Price, $4.25.

The Major Symptoms of Hysteria. Fifteen lectures given in the medical school of Harvard Univ. By Pierre Janet, Ph. D., M. D., Professor of Psychology in the

Pituitary Liquid
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Suprarenalin Solution, 1:1000 1 oz. bottles
Suprarenalin Ointment, 1:1000 - tubes

Suprarenalin designates the astringent, hemostatic and pressor principle of the Suprarenal Gland as isolated by the Armour chemists.

Suprarenalin Solution is the incomparable preparation of the kind. It is water-white, stable and non-irritating and is entirely free from chemical preservatives.

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College de France. 2nd edition. New York: The MacMillan Co. 1920.

Practical Tuberculosis. A textbook for the General Practitioner and those Interested in Tuberculosis. By Herbert F. Gammons, M. D., Superintendent Woodlawn Sanatorium, Dallas, Tex. St. Louis: C. V. Mosby Co. 1921.

American Red Cross Work Among the French People. By Fisher Ames, Jr. New York: The MacMillan Co. 1921.

BOOK REVIEWS

Rational Treatment of Pulmonary Tuberculosis. By Charles Sabourin, M. D., Medical Director of the Durtol Sanatorium, France. Authorized translation. 6th edition. 440 pp. F. A. Davis & Co., Philadelphia. 1921. Price, $3.50.

American physicians will be interested in a work of this character from a French authority so well known as Dr. Sabourin. The work is divided into three parts, the first dealing with the curability of tuberculosis, in seven chapters; the second part with the rational treatment of tuberculosis, in ten chapters, and the third part with social hygiene of tuberculosis, in four chapters.

This is an excellent work which can be recommended and the translation in no way handicaps the book. Everything is plain and condensed and yet it is so written as to cover the subject thoroughly. It is also a book which could be placed in the hands of the lay reader or patient with profit.

Eye, Ear, Nose and Throat Nursing. By A. Edward Davis, A. M., M. D., and Beman Douglas. 2nd edition, revised. 32 illustrations. 345 pp. F. A. Davis & Co., Philadelphia. 1920. Price, $2.50.

This little work, while written primarily for nurses, will prove a valuable helper to the general practitioner. It is not meant as a textbook on the subject but as a valuable guide for the intelligent care in the nursing of the various diseases of the eye, ear, nose and throat. The general practitioner will appreciate especially that part which deals with the preparation of the numerous antiseptic and sterile solutions and dressings and with the various remedies required in the treatment and nursing of these special organs.

In this second edition, the first issue of the work has been revised and an entirely new chapter on vaccine and serum treatment added. It is a practical little work worth the money to anyone.

Practical Psychiatry and Psychology. By C. B. Burr, M. D. 5th edition, revised and enlarged. Illustrated. 269 pp. F. A. Davis & Co., Philadelphia. 1921. Price, $2.00.

For many years, Dr. Burr's little work on psychiatry has held a place all its own for use in training schools for attendants and nurses and as a ready reference for the general practitioner. In this revision, additions have been made to the chapters on psychology and forms of insanity and the recommendations of the National Committee of Mental Hygiene for classification have been largely adopted. A new chapter on "Prevention of Insanity" has been incorporated.

This is by no means a textbook on psychiatry but the average practitioner has always evidenced a distaste for this subject and instinctively avoids lengthy works on it. This volume, however, is a ready reference which he will take pleasure in consulting many times during the year.

Mother and Child. By Edward P. Davis, A. M., M. D., Professor of Obstetrics, Jefferson Medical College. 4th edition. 278 pp. J. B. Lippincott & Co., Philadelphia. 1921. Price, $2.75.

The work is written for the mother, the nurse and the prospective mother. It is not intended to take the place of the family physician but is designed to help him in the care of his patients by placing at their disposal information which takes much of his time to impart. The work has reached the fourth edition which attests to its popularity and the need for a work of this character. This new work gives the latest advances in infant feeding.

It is plainly written, well illustrated and is highly recommended for the purpose for which it is intended.

Epidemic Respiratory Disease. By Drs. E. L. Opie, F. G. Blake, James C. Small and T. M. Rivers. Illustrated. 402 pp. C. V. Mosby Co., St. Louis. 1921. Price, $6.50.

This new work deals with the pneumonias and other infections of the respiratory tract accompanying influenza and measles. Much of the study detailed in this work is the result of the Surgeon General assigning a group of medical officers in July, 1918, to the study of the pneumonias prevalent in the army, the authors all being in the service and detailed to this work at the time. The Surgeon General has approved the publication of this report but the authors explain that they are alone responsible for the views expressed.

The work is an exhaustive study on the subject and a most valuable addition to the literature on epidemic respiratory disease.

The Watering Places of Switzerland. A paper covered booklet issued by the Official Information Bureau of Switzerland, 241 Fifth Avenue, New York.

This booklet describes the most famous health springs in the land of the Alps and their respective therapeutic factors. It is beautifully illustrated and will be of interest to anyone contemplating a trip abroad or sending patients there for sanitarium treatment. No price for the booklet is given and it is evidently sent for the asking.

The Medical Clinics of North America. Volume IV, Number 3 (St. Louis Number, November, 1920). Octavo of 280 pages, 30 illustrations. W. B. Saunders Company, Philadelphia and London. 1920. Published Bi-Monthly. Price per Clinic Year: Paper, $12.00; Cloth, $16.00.

Surgical Clinics of Chicago. Volume IV, Number VI (December, 1920). Octavo of 1,336 pages, 57 illustrations and complete index to Volume IV. W. B. Saunders Company, Philadelphia and London. 1920. Published Bi-Monthly. Price per year: Paper, $12.00; Cloth, $16.00 net.

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ORIGINAL ARTICLES

THE HUMAN BREAST: A PLEA FOR WELL DIRECTED TREATMENT BASED ON MORE ACCURATE DIAGNOSIS.*

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One of the great advances today in the profession of medicine is the changing attitude concerning health and disease. Gradually, the emphasis is being placed upon health maintenance rather than upon the cure of disease. Co-incident with this comes a nation-wide campaign along health lines, the hygienists advocating examination at definite intervals for the early detection, recognition and treatment of disease.

In the industrial and mercantile world the value of good health, from an economic standpoint, is being recognized, and there is a tendency to apply the efficiency expert in medicine, surgery and sanitation, as well as in various business and industrial pursuits. Many insurance companies, merely as a matter of business, are retaining corps of physicians and nurses to help prevent serious illness and possible fatality by the early detection of disease. The United States Bureau of Mines is constantly making experiments in an effort to lower sickness and mortality rates among miners, factory workers, and laborers of all classes. National, state and local boards of health are repeatedly stressing the importance of preventive measures. In special fields the American Association of Cancer Prophylaxis is one of the many organizations doing very useful service. Other agencies are emphasizing these points, but the examples quoted are sufficient to prove the trend of our times.

Thus, from these many sources, the public is urged to consult the physician at any deviation from the normal—in fact, it is asked to come from time to time, even though there is no evidence of disease. It is recognizing the force of these arguments and is slowly responding. The patients who come justly demand a recognition of all the aspects of the individual case.

The medical profession must be keenly alive to the importance of developing its ability to diagnose cases in their early stages. At times it has the unfortunate attitude of underestimating minor conditions and mentally pronouncing the symptoms merely those of hysteria. Physicians should not be so engrossed with acute illnesses, acute conditions, and more advanced pathology, as to fail to realize the importance of a thorough examination of all patients who seek medical care and attention, no matter how trivial the complaint may be for which they come. Early detection of an almost hidden danger signal may result in sparing the patient much future mental and physical suffering.

There is always the danger of overestimating, as well as underestimating, pathological conditions. Many can remember the period of the massacre of the ovaries, later of the appendix, then of the tonsils and colon, and more recently of the teeth. Is it possible that in the attempt to prevent cancer there may be the risk of another period of unnecessary sacrifice—that of the human breast? By way of illustration, there is the patient who discovers a lump in her breast and delays her visit to the physician by visioning mentally over his door, a sign which reads, "Abandon hope of escaping a terrible operation, all ye who enter here." On examination the physician may fail to weigh in the balance all the non-malignant possibilities involved, and permit her to leave his office with the belief that operation is the only means of saving her life. Accepting this verdict, the patient may be subjected to an unnecessary mutilating operation for a benign condition.

In contrast, there is the patient who receives, but fails to accept the advice of radical operation, and who drifts from physician to physician or

*Read before the Tri-State District Medical Society, Waterloo, Ia., Oct. 4, 1920.

from quack to quack for help. When the condition is a benign one the patient may be cured of a so-called "cancer" in spite and not because of the physician's advice, and therefore may be added to the host of those who spare no effort to influence the laity against the recognized profession. She points to herself as a living example of escape from cruel surgery. For this reason, the blanket rule of prescribing radical operation in all doubtful cases may act as a deterrent to those who most need care and observation. Frequently, the short delay in consulting the necessary authority constitutes the difference between the benign and the malignant stages of a tumor.

The public should be taught to come; taught that any lump is a great danger; that to consult a physician is the only safe method; that an examination does not absolutely mean a radical operation. The profession must realize its responsibility and seek to deal with the individual case on the merits of the conditions present, in the light of all that is known to medical science. It should be equipped with all the facts—not those of ten years ago, not those of yesterday, but the facts of today, and adequately be prepared to meet these seekers after truth by having at its command all the established current data of the profession, and then, only after deliberate consideration of all the evidence obtainable, render the verdict.

Medical knowledge concerning breast conditions is not sufficiently definite to warrant many dogmatic conclusions. There is an accumulation of material concerning which there is much academic disagreement. Information must be unified, standardized, and placed before the laity in a form which is thoroughly comprehensible. Only such vital phases of medical subjects as have received the practically unanimous approval of the profession should be released for the guidance of the general public. It is an unfortunate fact that some of the most eminent authorities disagree on essential as well as on non-essential points. For example, one surgeon states that *"every lump* which appears in a woman's breast *should be removed forty-eight hours after it is discovered."*

Another authority says: "When the question arises between chronic mastitis and carcinoma it is usually the safest procedure to *remove the breast,* and * * * * * *if no malignant process is found, one has merely removed a menace to the patient."*

In comparison, a well known author writes, "Those who have served apprenticeships in the laboratories of hospitals will admit, and all men of experience know, that frequently radical operation is performed for simple lesions. I have observed this in cases of simple fibro-adenomas, interstitial mastitis, and simple lobulation in a developing breast. Once I examined a pair of breasts, removed from a young woman by a specialist in diseases of children, and to this day I have been unable to find any excuse whatever for their removal. The Doctor was in Doubt.* * * * I believe it is a greater error to subject a young woman with a simple benign lesion to a radical operation than it is to fail to extend to a woman the 20% chance in case of actual carcinoma.* * * The platitude that it is better to sacrifice a dozen suspected breasts than to overlook a single case of carcinoma has long served as a cloak for ignorance of the finer pathological changes in the gland."

Recently, a leading pathologist made the statement "that he based more faith on clinical methods, carefully applied by a skilful person, than on other means of diagnosis at the present time. He said it was a strange fact that the clinician always insisted that the laboratory methods be applied to diagnosis, while the laboratory worker favored clinical methods—palpation, inspection and observation for a period of time, and that he had spent a great deal of time in the laboratory and preferred to base his diagnosis upon careful clinical methods. There was, he supposed, a common ground where laboratory worker and clinician would some day meet."* * * He added: "A physician does not impress other physicians or the public by applying the blanket rule to all breast tumors and insisting that every lump in the breast be excised. In distinguishing between malignant and benign tumors of the breast it is important to take into consideration the age of the patient, location of the lump in the breast, consistency of the tumor, history of the organ and all features of the case and in this way one can usually reach the diagnosis. The failure to recognize cancer is often due to lack of proper physical examination."

However, the following radical views from recognized authorities, have also been published.

"Cases of *secondary hyperplasia should be con-*

sidered as precancerous, and while they do not require so extensive an operation as the removal of the underlying muscles together with the axillary glands, yet *no portion of the mamma should be left.*"

"In the surgery of mammary tumors, I am convinced, however, that to insure the greatest good to the greatest number, would be to *advocate the removal of every tumor bearing breast.*"

"*Every benign tumor of the breast should be removed* before it has an opportunity to become carcinomatous. In other words, *it should be removed as soon as recognized.*"

At a recent medical meeting a surgeon said "that he *would today submit every portion of a breast with a blue dome cyst to careful microscopic examination,* and any breast, it made no difference what the gross appearance, where there existed one or a dozen cysts, regardless of the size of the cysts, should always be examined with the microscope. He had seen cysts removed and the patient come back with cancer of the breast."

In answer to this statement, another surgeon responded "that he did not care how the diagnosis was made, but if a whole breast must be had for examination, how could the breast be saved? The 'take out' policy would mean the mutilation of every woman with a lump in her breast."

The foregoing are but a few of the radical and conservative statements, the pros and cons of which must be carefully weighed before any definite conclusion can be reached. To radically remove the breast in all doubtful cases eliminates the development of malignancy for all time, and therefore safeguards the surgeon's reputation, but is this attitude a just or a scientific one? Considering the patient and remembering the number of unfortunate ones who have suffered unnecessary breast amputations, it seems imperative to say that the radical breast operation should be performed only after very careful consideration of all signs and symptoms.

Many patients suffering from cancer come too late, but it is equally true that there are changes of the breast simulating cancer, and these must be taken into consideration before making an accurate diagnosis. The physician must be ever on the watch for the frequent non-malignant breast conditions. Abscess, actinomycosis, catarrh, eczema, Hodgkin's Disease, intestinal and other toxemias, ovarian disease, menstruation, disturbed endocrine function, hyperplasia, mastitis, rheumatism, senile hypertrophy, congenital deformity, haematoma, traumatic fat necrosis, syphilis, tuberculosis, simple lobulation in the gland of the young maturing female, and the lumps which are prone to remain in the mammae of the child-bearing woman after lactation has ceased, are causes which often create suspicious masses in the breast region. To these may be added the benign tumors, as: adenoma, chondroma, cysts, fibroma, lipoma, myxoma, osteoma, and their combinations, adeno-cystoma, fibro-adenoma, cystic-adenoma, etc.

During years of practice the writer has examined large numbers of benign breast conditions, many of which were referred to him as malignant. Frequently, he has found it necessary to reduce an inflammatory condition before definitely deciding whether or not there was an underlying cancerous process. Some of the patients had retraction of one or both nipples, and others had one breast higher or larger than the other. By obtaining a full history and with careful observation these conditions were proved to be of congenital origin, and not in any way pathological.

In a recent tabulation of the first 2000 alphabetically arranged histories in the author's office files, the analysis showed 225 cases of benign breast conditions, and 85 cases of mammary malignancy. None of those diagnosed as benign has, to the writer's knowledge, developed malignancy and all those clinically diagnosed as cancer were proved to be such by pathological examination of the specimen. The following illustrative cases are reported in brief, covering only the points relevant to this paper, not because of the unusual aspects of the cases, but to emphasize the fact that there are many pathological changes in the mammae resulting from disorders in other parts of the body, which, without careful examination might be mistaken for cancer.

Note—In a paper read before the American Association of Obstetricians, Gynecologists and Abdominal Surgeons in September, 1920, I spoke of the many breast lumps caused by stasis and read reports of twenty-five cases, some of which had been under observation from fifteen to eighteen years, where the lumpy condition and even well defined tumors of the breast had disappeared under treatment for intestinal toxemia.

1. Intestinal stasis cause of lumpy breasts:—L. F.: Age 35; female; married; 2 children, nursed both.

Patient consulted me March, 1920, for retrac-

tion of and eczematous discharge from left nipple; considerable elongation and lumpiness of the upper, outer quadrant of the breasts; two small glands felt in left axilla.

Previous to consulting me the patient had seen two well known surgeons, one of whom had advised radical operation, stating to her "that there was no cancer but that the breasts were no good and she might as well have them off." This surgeon also wrote to the family physician: "I would urgently advise removal of both breasts."

After careful examination of the patient, and weighing well all the points, I was convinced that radical operation was not called for and accordingly recommended as follows: "Under no circumstances at the present time, without a fair trial of preliminary measures, would I submit to operation. After a month of treatment, we can definitely determine what progress has been made."

I then prescribed a brassiere to relieve all pull on the upper, outer quadrant; bicarbonate of soda baths; milk of magnesia internally; colonic irrigations; tonics; wholesome diet; bland ointment on nipples and large quantities of alkaline water, at the same time impressing the importance for frequent examination.

July, 1920, the patient returned for an examination. The lumps in the axilla had disappeared entirely; the right breast was less lumpy; the left breast better; the discharge materially lessened in amount and less irritating to the skin. The eczema about the areola had disappeared; the feel of the breast was almost normal and the general condition of the patient good.

The results already secured in this case make it clear that we have to deal with an inflammatory and not a malignant process.

2. Stasis breasts.

C. B.[1]: Age, 37; female; married; no pregnancy.

Patient consulted me February, 1914, for a lumpy condition of the left breast. There was also a mass in the right mamma which a surgeon, whom the patient visited, declared malignant. As the tumor in this breast was well defined, I advised conservative operation. This was done and the pathological report proved my diagnosis of benign neoplasm correct. After operation on the right breast, and medical treatment for intestinal toxemia, the left breast cleared and in July, 1920, the patient reported both breasts normal and her general condition excellent.

3. Stasis breasts.

A. B.[2]: Age, 25; female; widow; 2 children; nursed both.

Was always constipated and in March, 1915, began to have severe pain in the right lower quadrant of abdomen. In December, 1915, a lumpy condition was noticed in left breast, with bloody discharge from nipple, which was present when I saw the patient in February, 1916. There were also glandular lumps in the upper, outer quadrant of the breast; distinct tenderness in right iliac fossa, along the head of the caecum and over the appendix. X-Ray examination proved this a case of chronic intestinal stasis. After abdominal operation there was a slight discharge from the nipple for one week, after which breast cleared up. Patient is now in perfect health, and breasts are absolutely normal.

Previous to consulting me, this case was diagnosed by several clinicians as cancer, and radical and immediate amputation of the breast advised.

4. Congenital malformation of the breast.

H. S.[3]: Age, 30; female; single.

Patient was operated upon in 1915 for intestinal stasis associated with a general lumpy condition of the breasts. After abdominal operation, the lumps in breasts disappeared with the exception of an enlargement of the second costal cartilage under the right breast, which, previous to seeing me, had been diagnosed as a definite neoplasm. The characteristic feel of this might easily have led one to believe that it was an extension of a cancerous process from the breast. However, after careful observation, I diagnosed it as a congenital malformation. It had not changed

[1]Preliminary Reports in "Cancer Problem" and "Benign Mammary Tumors and Intestinal Toxemia."

Note—It should be remembered that in a large majority of cases some milk remains in the breasts of women who have borne children and especially in those who have nursed them. It is not the discharge that is important, but the character of the discharge.

[2]Preliminary Reports in "Woman's Medical Journal," May, 1917, and "Benign Mammary Tumors and Intestinal Toxemia."

[3]Preliminary Report in "Benign Mammary Tumors and Intestinal Toxemia."

in either size or form during my five years treatment of the case, and when I last saw her, both breasts were normal except for this slight deformity.

5. Hodgkin's Disease of the Breast.

E. N.[4]: Age, 32; female; married.

This patient, two years before consulting me, had noticed an enlargement of the thyroid gland and about a year later a tumor appeared on the right side of the neck and another at the upper, outer margin of the right breast, extending into axilla. Six months previous to operation, a piece was taken from the tumor in the neck at a hospital in a neighboring city. The report was lymphosarcoma, and the case considered beyond the hope of cure by operation. Patient grew steadily worse and exhibited pressure symptoms in the neck. As a palliative procedure, I removed tumors as far as possible, with extensive ligation of large vessels, and applied radium. The pathological report proved the case Hodgkin's Disease. The patient lived for several years, but ultimately died of the disease which had extended into many organs.

6. Lumpy condition of breast as result of tonsil infection.

S. K.[5]: Age, 31; married; no children; female.

First consulted me in January, 1917, for lumpy condition of both breasts. After operation for intestinal stasis breasts cleared entirely and patient made excellent recovery.

In 1919 she had influenza and later developed repeated attacks of infection of the throat. During these attacks the breasts became lumpy and showed a condition of mastitis throughout, as a result of the tonsil infection.

7. Apparent malignant recurrence.

E. M.: Age about 70; single; female.

In 1909 I removed the right breast of this patient for carcinoma; the left breast had been removed some years previous. Later an appendectomy was performed.

In 1912 small nodules developed on the chest wall over several of the costo-chondral articulations, near the scars of the breast operations, more marked on the right side. These were considered by several as malignant recurrences. The nodules were diffuse, very tender and painful especially in cold and damp weather. I made a diagnosis of systemic condition, and not of malignant recurrence. The patient was kept under close observation and given treatment for acidosis. The lumps disappeared entirely, and the patient is today perfectly well.

8. Eczema of the nipple.

K.[6]: Age, 26; female; single.

Patient had lumpy and painful condition of right breast due to pyogenic infection from eczematous ulcer of the nipple, which had persisted for some weeks. Because of the appearance of the breast and enlargement of the axillary glands, her doctor advised removal of the organ for carcinoma. A few days of proper treatment caused the eczema and lumpy condition of the breast to disappear.

9. Syphilis of the breast.

P.[7]: Age, 38; female.

Patient gave a history of having been well and strong until two years before consulting me, when she commenced having pain, more or less continuous, in the upper part of the right breast. Examination showed enlargement of the sternal ends of the second, third and fourth ribs on the same side. This was verified by X-Ray examination according to which the pleura and lungs were not involved, and the bone changes not sufficiently characteristic to justify stating whether this was sarcoma or some benign growth. Wassermann and Noguchi tests both proving positive, the patient was placed on iodid and mercury and later given salvarsan followed by mixed treatment. The enlargements, under these measures, disappeared and five years later the patient's physician reported her perfectly well.

10. Pelvic condition causing lumpy breasts.

A. S.[8]: Age, 32; female; single.

Two years before seeing me patient had an operation for a uterine condition. She consulted me July, 1919, for irritation of the bladder, severe

[4]Preliminary Report in "Conservation of the Human Breast," Int. Jl. Surgery, July, 1915.

[5]Preliminary Report in "Benign Mammary Tumors and Intestinal Toxemia."

[6]Preliminary Report in "Conservation of the Human Breast," Int. Jl. Surgery, July, 1915.

[7]Preliminary Report in "Conservation of the Human Breast," Int. Jul. Surgery, July, 1915.

[8]Preliminary Report in "Benign Mammary Tumors and Intestinal Toxemia."

pain in back and ovarian region, together with a lumpy condition of both breasts.

Laparotomy was performed, and I found a much enlarged uterus with a considerable number of fungosities, a mass of adhesions which extended back of the uterus down to the cul de sac, a fibrocystic right ovary, deep in the pelvic cavity, surrounded by a mass of omentum tightly adherent to the uterus in front and to the rectum behind. The mass was about the size of two hen eggs. The operative conditions were corrected, and in August, 1920, the patient reported that the lumps in the breasts had disappeared entirely; she had gained twenty-seven pounds since the operation and was in excellent condition.

11. Tuberculosis of the breast diagnosed as sarcoma.

M. C.[9]: Age, 55; female; married; five children.

Examined patient who for three years had a hard nodular swelling in the axilla, with involvment of the breast and who, during these years, had been operated on for this breast condition twice—a fistula in the axilla following the first operation. When I first saw the case, the mass was nearly the size of the entire breast—painful on pressure. The arm, too, was painful and much enlarged. Two specialists had declared the case advanced sarcoma, one physician telling her family that she could not live beyond a few weeks. The patient was given morphine so that she might be spared as much suffering as possible.

After careful examination I diagnosed the case as inflammatory—possibly tuberculous—and decided to give her a chance by extensive operation. This was done and pathological report proved the diagnosis of tuberculosis. After an uninterrupted recovery she was discharged from the hospital in two weeks.

Two years later she was reported as well, but since that time I have lost track of her.

12. Disturbed endocrine function causing lumpy breasts.

L. N.: Age, 42; female; married; 1 child.

Patient suffered from neurasthenia and hypothyroidism. Her weight increased until she averaged two hundred pounds. There were lumps in both breasts, and pressure on the mammae caused a certain amount of fluid to exude. The history of bloating, the added fat, the heart symptoms and the pigmentation and dryness of the skin all pointed to a disturbance of the internal secretions. Thyroid and multiple glandular secretion were administered and the excessive fat reduced. As long as the patient persisted in the treatment, the lumps in the breast disappeared, but on suspension of the medication they invariably recurred.

In August, 1920, the patient wrote that she was continuously on the multiglandular treatment, that she was in excellent condition, and that her breasts were perfectly normal.

Not only should the surgeon endeavor to be so qualified as to recognize the benign and malignant growths of the breast, as far as is clinically possible, but he should also have a very definite knowledge of the principles underlying the methods of examination. He should bear in mind the fact that the very life of his patient may depend upon the way he manipulates the tumor mass. The patient herself, or the solicitous friend may do damage by manipulating the breast, as may the doctor when he examines the case, or the surgeon when he operates. Nature erects natural barriers to protect the various cells of the body, but pressure along the blood vessels or along the lymphatic glands may cause malignant growths to reproduce themselves in locations other than the original site, by extension through these channels.

Despite all that has been written on the subject of biopsy, it is but a short time since the Board of Health of a large city requested the profession to cut into suspicious lesions—without one word of caution about protecting the patient against the possible spread of metastases—and submit small particles for examination, promising that a report on the tissue would be forthcoming in from 24 to 36 hours. Because of this attitude it seems necessary to emphasize once more the extent to which a patient's life may be jeopardized by biopsy for the purpose of pathological diagnosis. Cutting into a neoplasm of the breast, or any other part of the body, may cause such a dissemination of the

[9]Prelimary Report in "The Cure of the Incurable," American Medicine, July, 1915.

Note—In connection with this case, it is an interesting observation that the masses in the mammae, which were relieved on the basis of endocrine dyscrasia, were in the same relation to the gland—upper, outer quadrant—as those resulting from stasis or frequently seen during the catamenia.

cancer, if cancer be present, that subsequent operation will be of no avail. When the growth is at a difficult site, so that it cannot be completely removed, and pathological examination is necessary, the danger will be diminished by incising with the cautery knife or cauterizing the cut surface—destroying all the cells in the neighborhood and blocking the avenues of extension. A safe procedure is to examine the specimen by the frozen section method. However, there is also a chaotic state in this particular field, for some pathologists refuse to make a diagnosis on frozen section while others feel it is safe to do so.

In the light of present knowledge may not the following conclusions be drawn with safety, keeping ever present in mind the terrible sword of Damocles—cancer of the human breasts?

1. The laity is coming earlier, in increasing numbers, for examination.

2. Opportunity for service, on the part of the medical profession is being increased in proportion as the public responds to its summons.

3. The profession must develop a higher degree of diagnostic ability than in the past and possess itself of all the essential facts concerning breast conditions.

4. A judicial attitude must be maintained—careful examination with well poised judgment.

5. Accurate diagnosis of abnormal breast conditions means and demands a careful systemic survey as well as an efficient local examination.

6. The human mamma may be the seat of changes purely inflammatory or of neoplastic nature, closely simulating malignancy.

7. The relationship between the internal genitalia and the breast has been well established. Correction of abnormal pelvic conditions may ameliorate or relieve certain mammary changes.

8. The relationship between chronic intestinal stasis and certain breast conditions seems to be proved. Toxemia from teeth, tonsils and other parts of the body, may also have its effect upon the mammary gland.

9. Serious conditions are often overlooked while they are as yet amenable to the simplest measures of non-surgical treatment.

10. The use of the terms "breast" and "mamma" as synonomous may increase the difficulties of diagnosis. The writer believes it would be helpful to confine the term "mamma" to the gland with its ducts, including its outlet, the nipple; "breast" as embracing the entire mamma with all else that surrounds it—the skin, fat, fascia, capsule, and the bed upon which the gland rests, the fascia, muscle, and bone with the cartilage, in juxtaposition to the mamma.

11. Any of these structures may be diseased, and a multiple pathology be present, rendering diagnosis more difficult.

12. Abnormal conditions, congenital or acquired may be present in neighboring structures, and lead to the diagnosis of the inoperable and incurable stage although the neoplasm is early and surgically curable.

13. In spite of present knowledge, it is impossible at times to arrive at an immediate accurate diagnosis. In justice to the patient it may be necessary to keep her under careful observation, treating general conditions, before proceeding to radical surgery. If then, mistakes will occur, it should be the earnest endeavor of the profession to make them fewer and fewer.

14. It is reasonable to assume that with the early recognition of some lumpy conditions of the breast, followed by adequate systemic treatment, and mechanical support, underlying factors of malignant disease may be removed.

15. A question naturally arises: If all the foregoing is true, may it not be that in that multiplex disease grouped today under the term "cancer," there are possibly causative factors underlying malignant disease in the toxemias and the heterological activity of the endocrines. This seems to be a very promising field of research.

16. When cancer is present beyond a reasonable doubt, radical surgery is absolutely indicated.

To allow a patient to drift beyond the hope of surgical cure is a terrible tragedy; to unnecessarily and radically remove a woman's breast may be a profound calamity. With a deep sense of the limitations in the art of exact diagnosis and of the greater responsibility today in the enlarging field of service for humanity, let the profession ever be guided by the watchword "Not Fears but Facts."

INFECTIONS OF THE URINARY TRACT, WITH CONSIDERATION OF THE SO-CALLED "PYELITIS" GROUP.*

BY BUDD C. CORBUS, M. D.,

AND

VINCENT J. O'CONOR, M. D.,

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The subject of "urinary infections" has been given wide attention and has occupied a very prominent place in medical literature during the past decade. It is also only fair in passing to recall to you that the progress which has been made toward the early and accurate diagnosis of these conditions is due almost solely to the combined labors of the research worker and the specialist in urinary disorders.

Despite this advancement in the localization of these infections, and in the provision of more satisfactory methods of therapy, there is still much to be desired in the way of co-operation between the practitioner, who embraces within his scope the more general fields of medicine, and the specialist who is limiting his endeavors to the field of Urology.

It is obviously as impossible to separate in a general consideration, the infections of the lower from those of the upper urinary tract, as it would be to consider pharyngeal infections independently of nasal disease. The physician who attempts to specialize must strive to know equally well the disorders of the entire system.

The foregoing statements may seem entirely unnecessary in a paper on this subject but we have prefaced our remarks in this manner because of repeated experiences of our own along these lines. It is a very frequent occurrence in our practice to be consulted concerning a certain class of patients who have been treated for a persistent urethral discharge. In the majority of these instances the patient has been previously informed that he or she has a localized infection of venereal origin. Careful special study of these cases, however, demonstrates absolutely that the patient is suffering from a non-venereal infection. In these instances the urethral symptoms are merely manifestations of an infectious process involving separately or concomitantly the bladder, kidneys or adjacent structures.

What are the sources of infection of the upper urinary tract? Is it important for us to trace the infection to its source? We shall try to answer these questions by an analysis of our definite knowledge.

It is, of course, needless to state that infection of the kidneys is never primary. The kidney being the great vascular exeretory organ of the body, it is, occasion demanding it, called upon to excrete organisms circulating in the blood stream. If there is no mechanical interference in drainage from the renal pelvis, and if the number and virulence of these organisms is limited, no local infection occurs. If repeated passage of organisms through the kidney occurs, or if there is a marked virulence or specific affinity of the organisms for renal tissue, localized infection may occur, despite the fact that there is no abnormality in drainage from the kidney. If there is an existing mechanical condition allowing pelvic, or uretero-pelvic, stasis to occur there is a resultant increase in number and virulence of the invading organisms. This is the so-called "hematogenous route" of infection of the urinary tract and must, in the light of our present knowledge, be considered the most frequent.

Is there any other route by which the kidneys can become infected? Infection can and frequently does reach the kidneys by regurgitation from a bladder secondarily infected from the urogenital tract. This is the etiological source accepted many years ago but later discredited by the majority of investigators. During the past few years this phase of the subject has been repeatedly studied in a more accurate and detailed manner, both experimentally and clinically, and there is now no doubt that a considerable percentage of infections reach the kidneys by regurgitation from the bladder. This is shown to be especially true, both clinically and experimentally, when there is a moderate amount of bladder retention.

The theory of lymphogenous extension of infection to the kidneys seems, by the more recent experimental evidence, to occur very infrequently or never at all.

The importance of understanding and searching for the focal source of urinary infection can not be over emphasized. In our opinion the omission of this search is the outstanding and unfortunate phase of deficiency in the general conception and handling of renal infections at the present day.

*Read before the Wilmette Physicians Club, Wilmette, Ill., on Feb. 11, 1921.

An infected kidney pelvis or renal parenchyma will only in a minor percentage of instances persist in harboring infection if the supply of infecting organisms ceases to reach these tissues. This is true, generally speaking, only in organs which have no deficiency in drainage from the pelvis to the bladder. However, in those cases in which there is an interruption to the normal drainage of urine a single passage of infecting organisms may result in a persistent infection of the pelvis of the kidney.

Realizing then that the persistence of the focus which furnishes infection to the kidneys is the most important factor in the general consideration of these cases we must also admit that clinically we find a certain percentage of individuals with renal infection persisting in spite of failure on our part to demonstrate an active focus or an obstruction to drainage. Thus in compiling statistics on our own cases, as well as observing the reports of others, we find that a contributing source of infection is discovered in only slightly more than fifty per cent of instances.

We firmly believe however, that as our experience grows and we become more and more attentive to finding and eliminating the primary source of infection our ability to obtain more rapid and complete relief of urinary infection will result.

It is a well known fact that over eighty per cent of the individuals in the tropics who suffer from an amebic dysentery of any duration develop a secondary colon bacillus infection of one or both kidneys. A continued observation of these cases shows that if the patient recovers completely, (i. e. has no persistent constipation), the urinary infection usually clears up with the subsidence of the bowel trouble. In those individuals who have a persistent constipation secondary to the enteritis there is practically always unrelievable chronic urinary infection.

The average Urologist has been very slow to connect up the relationship between chronic intestinal stasis and pyelitis. The "cathartic treatment" of these individuals with constipation increases the irritability of the bowel and apparently is partly responsible for the continuance of the urinary infection.

To be sure we have passed through periods in medicine when intestinal stasis has been considered the alpha and omega of all ills, and we have rightly come to be more conservative in our placing of blame upon this condition. Nevertheless this very important etiological factor must be constantly borne in mind in eliminating persistent renal infections.

One investigator has recently claimed that in a certain maternity hospital over fifty per cent of the pregnant women had colon bacilli circulating in the blood stream. Of this number all were markedly constipated and sixty per cent had a colon bacillus pyelitis complicating pregnancy.

Some men have even gone to the extreme of extirpating the ascending colon and caecum in cases of persistent colon bacillus pyelitis. Many of the results published have been favorable. We mention such radical procedures not to sanction them but to impress you with the distinct association between chronic constipation and chronic pyelitis.

While the colon bacillus is the most common organism causing persistent pyelitis, or pyelonephritis, it is not infrequent for other organisms to be responsible for continued infection. In acute infections of the kidney following acute infectious diseases, or severe pyogenic coccal infections of any kind, the kidney lesion is almost solely confined to the cortex. This is not true, however, in chronic infections of the kidney. The lesions produced by the staphylococcus, streptococcus, or pneumococcus coming from such a focus of infection as an infected sinus, alveolar abscess, or chronic tonsillar infection are symptomatically and pathologically the same as those produced by the bacillary type of infections. Repeated study of organs removed on an inaccurate diagnosis, or at autopsy, when death has been due to some other cause, has shown the invading organisms to be located in the mucosa and submucosa of the ureter, pelvis, and calices. Occasionally the infecting organisms are also harbored in the parenchymatous tissue about the medullary tips of the kidney.

The symptomatology of urinary infections is quite variable. The initial symptom may consist in an indefinite febrile reaction: an attack of lumbar or abdominal pain: marked frequency of urination: pain on urination: or a combination of any or all of the aforementioned.

The severity of the symptoms depends upon the intensity of the reaction to the infecting organisms and to the extent of involvement.

In all cases where a high fever of obscure origin

exists, the presence of pyelitis or acute hematogenous infection of the kidney should be given serious consideration. Frequency of urination is most often the initial symptom. It is practically always associated with dysuria of varying intensity. When the onset is very acute, and inflammatory obstruction in the pelvis or ureter is brought about as a local reaction to the infection, lumbar or abdominal pain may be the outstanding symptom. If this pain precedes the urinary symptoms it may be several days before the latter appear. Many cases of persistent urinary infection have no dysuria or frequency at all, but these cases are exceptions rather than the rule.

It is frequently very difficult to differentiate clinically between the pain of an acute renal infection and that of an acute appendicitis, salpingitis or biliary colic. A careful analysis of the history of onset should be made. An acute renal infection with symptoms simulating an "acute abdomen," has a very sudden onset. The temperature rise is rapid and marked, but is more prone to subside at intervals of from three to eight hours, if the patient is put completely at rest. Definitely localized spasm of the erector spini group of muscles and pain on deep pressure in the costovertebral angle are most important objective points in the differentiation. Radiation of pain down the course of the ileo-inguinal and ileohypogastric nerves occurs in about thirty per cent of all acute renal infections in which pain is the prominent symptom.

The abdominal type of pain usually experienced in acute renal infections is distinctly intermittent in character. At first it is sharp and lancinating, but even though very severe, is usually of a vague localization by the patient. Later there is a dull ache, usually a "sore" feeling readily localized to the flanks or outer wall of the abdomen. Pressure on the testis itself may give severe pain in some of these cases whereas pinching of the scrotal wall elicits no discomfort.

Routine urine analysis should be made. In women a "catheter" specimen is necessary. If there is an appreciable number of leucocytes or red blood cells present the consideration of pyelitis should be given added importance. Here the judgment of the individual will play the most important role. Nothing is more disappointing to a surgeon than to remove a normal appendix when the underlying trouble is a stone, a kinked ureter, or an infection in the kidney. The reverse is true. If we allow an appendiceal abcess to form because we believe the condition to be an acute urinary infection we are no less to blame. All we can say in a general way is this, make a careful study of the individual patient with a detailed analysis of onset and chronological occurrence of his various symptoms, make free use of the X-Ray, give due consideration to the degree of leucocytosis, make careful routine examination of the urine, and lastly do not hesitate to do cystoscopy with ureteral catheterization when the diagnosis is in doubt.

In a large eastern hospital where careful diagnostic and statistical work is done the following interesting records have been made: During the first five years there was no special service in Urology and all cystoscopic work was done by the general surgical service. During this time one hundred and twelve normal appendices were removed from individuals in whom the presence of renal calculi, nephroptosis, or pyelitis was demonstrated as the etiological factor producing the symptoms. Since the establishment of a Urological service, with an attending Urologist and a Resident Urological Surgeon as a sub-department under general surgery, only twelve such cases have gone to operation under this mistaken diagnosis. However, during these three years there were ninety-six cases admitted as "acute appendicitis" which were shown on more careful study to be suffering from pyelitis alone, or complicated by stone or malposition of the kidney.

Red blood cells are passed in the urine of patients suffering from urinary infection in fifteen per cent of instances. This occurrence of hematuria may be indicated by large quantities of macroscopic blood, usually thoroughly mixed with the excreted urine or by small numbers of microscopically demonstrated red cells.

Many cases of so-called "idiopathic hematuria" are now definitely shown to be due to chronic pyelitis with involvement of the medullary tips of the kidney resulting in a profuse unilateral or bilateral hematuria.

The accurate diagnosis and localization of urinary infections depends upon cystoscopic examination, ureteral catheterization, pyelography and separate function and cultural examinations of the divided specimens of urine. We do not mean to convey the idea however that every case of urinary infection should be immediately subjected to a

cystoscopy. We believe the indications for cystoscopic examination to be positive and ones to be taken with due seriousness of thought.

In acute pyelitis where a high temperature is present without marked remission during at least eight hour intervals, and where repeated rigors and a certain amount of general prostration occur, cystoscopy and ureteral catheterization is indicated at once to effect proper drainage from the renal pelvis. The question of length of time for allowing the catheters to remain in situ will depend upon the individual case. Mechanical cleansing of the pelvis by lavage with sterile water or weak boric acid solution may be done at this time but we are not enthusiastic about this procedure because of the possibility of carrying infectious material up the convoluted tubules into the kidney. Certainly no strong antiseptic solution should be used to lavage these acutely inflamed pelves as the added reaction in the wall of the pelvis and medullary portion of the kidney may seriously interfere with future drainage and renal function.

Large doses of Hexamethylenamine and sodium acid phosphate should be given at once. It is best to start with ten grains of each at four hour intervals, doubling the dose in three days if no untoward symptoms result from the formalinization.

The effectiveness of "Urotropin" depends directly upon the immediate hydrogen-ion concentration of the urine, so that it is practically inert at the level of the kidney unless the urine is strongly acid. To accomplish this acidity at the right time the sodium acid phosphate must be given about two or three hours before the Hexamethylenamine is ingested. The reason for this is that the urine is made more highly acid in its reaction, by raising the alkalinity of the blood, and this takes from two to three hours to reach its maximum.

In the very acute cases with signs of a pyelonephritis about 2000 c. c. of fluid should be taken in the 24 hours. After the subsidence of the acute symptoms 3000 c. c. should be taken daily unless there is some complicating cardiac condition forbidding this amount.

Mild catharsis, a full, but low protein, diet, and rest in bed are all important in the acute cases.

Now; what becomes of these acute cases? If there is no continuation of a focal source for infection, if there is no mechanical interference in drainage from the kidney, about eighty per cent of these patients become symptomatically well. How many become bacteriologically well we can not say because the absence of symptoms results in the patient disregarding further medical observation.

The persistent cases of pyelitis are the most commonly seen and recognized and the most difficult to clear up.

First: We must examine carefully for focal infection. The teeth, sinuses, tonsils, low grade infections of the prostate gland or fallopian tubes, appendicitis, seminal vesiculitis, and last but most important, the question of intestinal stasis must be given due consideration.

Second: We must determine whether one or both kidneys are involved and the infecting type of organisms. The individual function of each kidney by means of the phenol-pthalein test should be done as a routine measure at this time.

Having arrived thus far in our consideration we may feel satisfied to continue treatment along the lines of general systemic management, sufficient fluid, urinary antiseptics by mouth and lavage of the renal pelvis. The type of lavage of the renal pelvis will depend upon the type of infection. If the infection is of a coccoid organism, and we feel that we can eliminate the source of infection outside the urinary tract, pelvic flushing of warm sterile water or 2% boric acid solution will suffice. If the infection is a persistent one, and we are at a loss to find any focus other than the renal pelvis, "mercurochrome 220" or some equally penetrating antiseptic and mildly irritating dye should be used.

If the infection is bacillary in type a systematic course of lavage with silver nitrate solution is indicated. Starting with 0.5% and gradually increasing the strength. Pelvic lavage with any drug should not be repeated oftener than every ten days.

In the male if the prostate and seminal vesicles have become secondarily involved they should be appropriately treated during the intermissions between pelvic lavage since infection may persist in these structures after it has been eliminated higher up.

Roentgenograms of the kidney, lumbar and bladder regions should be made on every individual suffering from renal infection. Silent renal calculi are not infrequently the underlying cause

of an acute renal infection. However, it must be borne in mind that plain X-Ray pictures even with the ureteral catheters in situ are not sufficient to give us an accurate diagnosis in many cases where renal infection persists. Every individual who does not readily respond to general and local treatment should have satisfactory uretero-pyelograms made.

The technique of pyelography is now so simple and its application so satisfactory that no argument against this procedure can be taken seriously. With the catheter tips at the uretero-pelvic juncture a 15 per cent solution of sterile sodium bromide is gently forced into the kidney pelvis by means of a record syringe. From 8 to 12 c. c. will sufficiently distend the average renal pelvis and calyces so that their outline may be studied in detail. Greater quantities of the opaque fluid will be necessary in pelves that have been dilated or partially destroyed.

Since twenty per cent of renal calculi do not appear in plain roentgengrams it is imperative for us to attempt to demonstrate their shadows by contrast to the surrounding opaque medium. In this way we are able to bring out in the picture the shadow outline of practically ninety-five per cent of all formed calculi.

Where mobility of the kidneys is suspected a pyelogram should be taken with the patient both in the prone and erect positions.

A comparative study of position, capacity, and question of actual rotation or obstruction can then be made. Ureteral kinks, external mechanical influences obstructing the ureter and other factors may be so demonstrated.

Owing to our opportunity to see and study a large number of renal infections we are gradually beginning to rely on pyelography as our most important prognostic aid.

The pyelogram tells us whether or not there is a mechanical factor responsible for the infection and is our most accurate indication for or against surgical intervention.

Our prognosis in each individual case will depend primarily on our ability to eradicate the focus of infection outside of the kidney, and secondarily upon the rapidity with which we can clear up the local focus in the pelvis and calyces. Pyelography will accurately outline the extent of dilatation of the calyces and renal pelvis and demonstrate the amount of urinary stasis. By considering the pyelograms, in conjunction with our other findings, we can more accurately plan our method of treatment and more satisfactorily decide as to the outlook for a complete cure.

We have purposely omitted a discussion of pyelitis of infancy and pregnancy preferring rather to consider this subject from a general point of view.

We hope that there will soon be established an association of a more practical working nature between the more general practitioner and the Urologist for the handling of these cases.

PRENATAL CARE: ITS IMPORTANCE AND PROPHYLACTIC VALUE.*

BY C. HENRY DAVIS, M. D.,

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Motherhood is a special function with which woman is endowed. For this privilege she has paid a terrible price in pain, invalidism and death. Our mortality statistics indicate that as late as 1916 one mother died in the United States for every 152 live births. In addition to the deaths it is conservatively estimated that at least one woman in 40 is more or less permanently invalided.

The old natural law, natural function, physiological process fallacy is largely responsible for the long continued high mortality and morbidity of women who become mothers. Natural law is general law and no individual consideration is given. In its workings as shown by geological records it has been cruel and wasteful. All life, plant and animal, has been developed by the law of the survival of the fittest. Man is endowed with a superior brain and placed above the animals. Throughout the ages man has battled with the elements. Gradually he has learned more of the secrets of nature and employed them for his own betterment.

At birth the most helpless of animals—the human young—develops, through a gradual evolution, until he is the master and controls all forms of animal life. But man so careful of his pigs and his cows gives much too little thought to the

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woman who is becoming a mother and the new born child.

A recent circular of the American Child Hygiene Association states: "Of every 100 babies born alive, 11 die during their first year of life, of whom nearly one-half die in their first month. In addition to those born alive 4 or 5 are born dead, and there are also an incompletely known number of miscarriages estimated at from 12 to 15. Out of 100 babies conceived, 62 are likely to be born alive at full term; 38 will die unborn, or born prematurely or unfit, will die in infancy."

A study of the 1918 mortality records of the United States indicate that about 23,000 mothers died from conditions *directly charged to childbirth* and that some 257,000 babies died during their first year of life. Compare these losses with those sustained by our army and navy for the corresponding months when our casualties were highest and it is seen that a baby died for every soldier or sailor dying from wound or disease. As a result of scientific medicine and surgery in war, according to weekly bulletin No. 59 of the Chief Surgeon S. O. S. of the A. E. F. "of the cases of diseases: 90.2 per cent returned to duty, 6.0 per cent were invalided home, 3.3 per cent died in hospital, and 0.5 per cent deserted. Of the cases of traumatism: 73.8 per cent returned to duty, 21.1 per cent were invalided home, 5.7 per cent died in hospital, and 0.4 per cent deserted." A similar application of our present medical knowledge would probably have saved the lives of at least half the new mothers and young babies who died in 1918.

The objective of prenatal care has been stated by Williams as: "Such supervision of the pregnant woman as will enable her to go through pregnancy safely, to bring forth a normal living child with minimum danger, and to be discharged in such good physical condition as to be able to care for her child efficiently and to suckle it for at least the first months of its life." Ballantyne has well said: "We can only reach the unborn infant through the mother who carries him, and so the prenatal life of the child and the life of the woman in pregnancy are closely bound together and depend one upon the other."

Medical authorities are agreed that prenatal care is important. Where it has been introduced and tested its great prophylactic value is appreciated.

VALUE OF EARLY EXAMINATION.

That the fundamental aim of pregnancy should be to secure a live child which will have a reasonable chance of reaching adult life—is axiomatic. Yet at present this is true in little more than half of the conceptions.

Spontaneous abortions too frequently occur as the result of some physical condition such as a retroflexed uterus, an unhealthy or over strenuous occupation, improper hygiene, a severe toxemia of early pregnancy, or some infectious process. An early physical examination and a carefully taken history will lead to a discovery and correction of unfavorable conditions and a reduction in number of abortions.

The early recognition of certain diseased conditions such as tuberculosis, heart disease, nethritis, gonorrhoea and syphilis is of great importance. Unsuspected and untreated these conditions greatly increase the risk to both the woman and the ovum in her womb. Certain phases of these conditions will be discussed later.

The early findings of conditions which may cause dystocia such as contracted or deformed pelves, tumors or displaced organs, is important as it leads to a consideration of the treatment required before the emergency arises.

NECESSITY FOR CONTINUED OBSERVATIONS.

More than half of the women seen in private practice suffer more or less from the nausea and vomiting of pregnancy. By careful management the vomiting is usually stopped and the nausea controlled. Having discussed this treatment in a recent paper the plan need not be reiterated at this time. I believe that through early treatment of nausea and vomiting we will eliminate pernicious vomiting of pregnancy.

During pregnancy constipation is a common and annoying disturbance. I have found the use of liquid petrolatum and milk of magnesia very satisfactory for most patients. It is important that the bowels be regulated as poor elimination predisposes to the toxic complications of pregnancy.

While personal experience indicates that the continuation of alkaline treatment throughout pregnancy lessens the acid destruction of the woman's teeth nevertheless the teeth should be

carefully watched by the dentist and decayed areas cared for by means of temporary fillings. Teeth requiring extraction should be removed regardless of the pregnancy.

EXERCISE AND REST.

Exercise is required to keep the body in a healthy condition. The woman who does much or all of her housekeeping needs no special exercise—rather she must be warned against doing too much lifting, etc. Walking or riding in the fresh air is needed to rest her from the house. The society woman may be benefited by massage and the less strenuous calisthenic exercises.

Every pregnant woman should have frequent periods of rest so as to avoid fatigue. I usually instruct the pregnant woman to lead her normal life, but to be very moderate in everything. Just as she should stop eating before reaching her capacity, she should secure some rest before she feels tired. Naturally she should be warned against the more strenuous forms of work and play.

ROUTINE TESTS.

The importance of urine tests during pregnancy has long been recognized. More recently it has been observed that it is equally important to follow the blood pressure. I have frequently noted an elevation of blood pressure several days before albumen could be found in the urine. An elevation of blood pressure of more than 15 m. m. above the patient's normal pressure should lead to frequent tests and an effort to secure more active elimination.

EFFECTS OF OCCUPATION.

The entry of large numbers of women into industry requires that a careful study of industrial hazards be made. Thus far few such studies are available and those chiefly among women employed in munition factories during the late war. However, the following quoted from Thompson's "The Occupational Diseases" gives much food for thought along this line.

"Oliver found that married women who formerly were permitted to work in white lead production almost invariably miscarried, or bore stillborn infants, or infants that died of an early age of convulsions. It was this circumstance which attracted his attention to the hazards of lead work and led to the admirable investigations which in England have resulted in so much beneficial parliamentary control of the entire lead industry. In the stillborn infants Professor Bedson determined traces of lead in the kidneys and liver.

"Of 141 pregnant women who worked in lead factories in France it was found by Constantin Paul that 82 aborted, 4 gave rise to premature births, 5 to stillborn infants. Of 50 infants born living at term, 35 died in two years. Thus only 15 children of 141 pregnant women lived beyond the third year."

"In the French Department of Labor Report on Industrial Poisons, made by M. Tardieu in 1905, among 1,000 pregnancies in lead workers, 609 terminated in abortion."

"Oliver found that of the children of paint-grinders, 40 per cent died of convulsions during the first year of life."

Deacon reported 101 pregnancies occurring among women employed in an English munition factory. As soon as pregnancy was determined the women were placed on light work and no bad results were observed. He believes that among this group of women, as a result of careful supervision, good food and regular exercise, their babies were stronger than usual for this class of women.

TUBERCULOSIS.

Tuberculosis is as much a contraindication to marriage as gonorrhoea or syphilis. Similar rules should apply. Women, in particular, should not marry until some years after all signs of active tuberculosis have subsided. Bacon estimates that 33 per cent of the tuberculous women who become pregnant will have died of tuberculosis within a year after delivery. Of the advanced cases who survive the pregnancy about 50 per cent will have died within a month after delivery. It is therefore evident that pregnancy is a most dangerous complication of tuberculosis.

Tuberculous women who contemplate marriage should be instructed regarding the dangers of a recurrence during pregnancy. They should be made to appreciate the necessity of receiving the maximum of rest, fresh air, good food, and expert medical supervision during the entire period of pregnancy, labor and the puerperium and for many months thereafter. In many instances they should not attempt to nurse their babies.

The married woman who develops tuberculosis should be advised against pregnancy until several

years after all symptoms have subsided. Should she in spite of advice become pregnant, sanatorium care is advised as few women will receive the necessary rest, fresh air, and proper diet at home. An attempt should be made to bring her through the pregnancy with the minimum of danger. A healthy child may usually be expected, but it should be removed from the mother at birth. Nursing is rarely if ever advisable in these cases as it greatly reduces the chances of the mother and exposes the child to a practically certain contact infection. Therapeutic abortion should be reserved for consideration in the cases where with the absolute rest in bed in early pregnancy there is a continuation or gradual increase in the afternoon temperature. Pregnancy will kill most of these very active cases before viability. For such women the prognosis is bad regardless of the treatment.

HEART DISEASE.

After a careful study of the heart records of 7,200 pregnant women observed at the Prenatal clinic of the Boston-Lying-in Hospital from May, 1911, to July, 1915, and 22,055 pregnant women entering the Hospital for delivery or care in pregnancy from January, 1873, to June, 1916, Foster S. Kellogg came to the following conclusions regarding heart disease and pregnancy:

1. One-half per cent of pregnant women have chronic endocarditis.

2. Fifteen to twenty per cent show some decompensation under prenatal care, half these 1st degree decompensation, half 2nd degree decompensation.

3. Cases with stenosis of the mitral valve, with or without insufficiency, are far likelier to decompensate in pregnancy than cases with simple insufficiency.

4. The maternal mortality of chronic valvular disease in pregnancy is two per cent. The maternal mortality of cases showing 2nd degree decompensation, requiring induction, and 2nd degree decompensation in labor, is forty-five per cent.

5. Mitral stenosis is almost always present in fatal cases.

6. Fetal mortality runs from ten per cent, in a series including all cases, to forty per cent in cases with 2nd degree decompensation.

7. Chronic valvular heart disease complicating pregnancy is, in view of these figures potentially a very serious condition for mother and child, and the handling of these cases requires the utmost attention and skill, frequent prenatal observation being an absolute necessity in all chronic valvular cases complicating pregnancy.

8. Half of these cases not under good previous care for their heart condition, which show decompensation, will recover sufficiently under medical treatment, rest and the proper regulation of their lives so that they do not again decompensate, and so that they will stand any appropriate method of delivery at term.

9. Many chronic valvular heart cases compensated with only slight degrees of decompensation and some with 2nd degree decompensation will safely deliver themselves if allowed to. Though this fact is undeniably true, theoretically, and with what data we have at hand, it should not be allowed.

My own observation of patients with heart disease and pregnancy tends to confirm Kellog's general conclusions.

SYPHILIS.

Syphilis has long been recognized as one of the most important causes of intrauterine death but only within recent years have studies been made which give any idea as to the frequency of this condition. At the last meeting of the American Gynecological Society, Dr. Williams read a paper on the value of the Wassermann reaction in obstetrics based on a study of 4,547 consecutive observations. Four thousand of the women, 1,839 whites and 2,161 blacks, were delivered between the 28th week of pregnancy and full term. In the series a positive Wassermann reaction was noted in 421 cases, an incidence of 10.5 per cent; 2.48 per cent in white and 16.29 per cent in blacks. In this series 302 children were born dead or died during the two weeks following delivery, and 102, or 34.4 per cent were proved by the demonstration of the organism to have syphilis. Williams' study of the 421 positive cases, showed (1) that the presence of a positive Wassermann does not necessarily mean the birth of a syphilitic child; and (2) that efficient treatment instituted by the middle of pregnancy gives almost ideal results so far as the child is concerned. Unfortunately these and other published observations show that the finding of a negative maternal Wassermann does not prove the absence of syphilis,

there being 22 syphilitic children proved by autopsy in this series whose mothers were negative.

While in practice it is not practical or necessary to have a routine Wassermann on every woman, yet one should be made if the history is the least bit suspicious. Every stillbirth should be carefully investigated for possible syphilitic lesions. I have had a strongly positive Wassermann in cases where there was no reason to suspect syphilis. Thorough treatment will render such women able to deliver healthy children in subsequent pregnancies. The children of syphilitic parents should of course be carefully observed during the first years of life and treatment instituted should any signs of the disease appear.

NEPHRITIS AND NEPHRITIC TOXEMIA.

After syphilis, nephritis is the next greatest cause of intrauterine death during late pregnancy. It is perhaps a more dangerous condition than syphilis in that it greatly increases the dangers to the mother as well as to the foetus. Chronic nephritis is a contraindication to pregnancy, but since many women with nephritis become pregnant it is important that the kidney condition be discovered early and carefully followed throughout the pregnancy. In addition to the routine urine analyses kidney function tests will aid in determining the amount of kidney impairment. It must be remembered, however, that during pregnancy kidney function tests are reduced even in the presence of normal kidneys. Blood pressure readings should be made at frequent intervals throughout the pregnancy as in these cases the variations upward in blood-pressure are of great significance.

Nephritic toxemia must be differentiated from the pre-eclamptic toxemia as the treatment is very different. With an impending nephritic toxemia the pregnancy must be interrupted as the only means of securing a live child. Too long a delay also means so much destruction of kidney cells that the injury is permanent; the blood pressure continues very high, and the patient's life is materially shortened. On the other hand, pre-eclamptic toxemia yields to eliminative treatment, and following delivery the blood pressure soon returns to normal.

GONORRHOEA.

Gonorrhoea is a serious complication of pregnancy and requires careful treatment. Not only is the inflammation of the acute stage more extensive and severe, but the acute process lasts much longer. The treatment is more difficult owing to the danger of causing an abortion. However, most of the gonorrhoeal infections with which we have to contend during pregnancy are chronic. Frequently the condition is not diagnosed until during the puerperium, and then not until the baby's eyes are infected or the patient develops a salpingitis.

Formerly, opthalmia neonatorum occurred commonly in the babies of mothers infected with gonorrhoea. It was the great cause of blindness in children. Today, the routine use of the Crede silver treatment of the babies' eyes after birth has largely eliminated these birth infections. However, there is still danger of the baby becoming infected subsequently unless the infected mother has been carefully instructed regarding cleanliness and personal hygiene.

It is important that all these cases be detected and treated. At present that is impossible, but whenever there is a suspicious history a single negative examination for the organism should not be considered sufficient proof of a cure. Repeated examinations are indicated. A perfect nursing technic will reduce the danger of crossed infection to the minimum.

The lighting up of an acute gonorrhoea will usually be noted in the first days of the puerperium. This is favored by the presence of other organisms such as streptoococci and staphlococci. A chronic gonorrhoea is the usual cause of the late puerperal fevers coming on during the second week of the puerperium and rarely before the tenth day. These late infections frequently cause one child sterility as they so commonly result in pus tubes or an obliterative peritonitis. An acute gonorrhoea contracted during the puerperium runs a violent and destructive course.

LOOKING BACKWARD AND FORWARD.

Looking backward we have the deaths of 23,000 mothers and 257,000 young babies in 1918. The records will show a similar number of deaths in 1919 and 1920. But during the past decade there has been a definite appreciation of this appalling

and unnecessary mortality. The Children's Bureau of the Department of Labor has been cooperating with groups of interested physicians in conducting a campaign of investigation and education. Lay magazines, after an ill-timed exploitation of "Twilight Sleep," have recognized the crux of the problem and are working for better care of mothers and babies. The standards for Governmental aid of maternity and infancy are already being crystallized in the Shepard Towner maternity bill now in Congress.

The present plight of the average pregnant woman is pitiable. Gradually she is being educated to the realization that much of the pain, invalidism and mortality is unnecessary when proper care is had during pregnancy and labor. It is generally agreed that delivery in a hospital is safer than in the home. But the average woman in Wisconsin and elsewhere does not and at present cannot obtain the sort of care you and I wish for our wives. Many of the hospitals in Wisconsin refuse to accept obstetrical patients. Thousands of our women are so far removed from a hospital which will receive them that even the most serious operative deliveries must be attempted in the home, and under the most unfavorable conditions.

The care of our mothers and babies is not only a social problem, it is a most important economic problem. Our burden of taxation in 1920 averages $50.00 per person for our 110,000,000 population; 92.8 per cent of this expenditure is for the costs of the recent and former war and the preparation for future wars. Fifty cents per capita is spent on all research, educational and development activities, five mills on activities on behalf of labor and *half of this, or two and one-half mills, on the special bureau for women and children.* In view of its importance and prophylactic value, is it not time that we do more for the development of prenatal care?

The perambulating dental clinics of the U. S. Public Health Service have proved that poor health makes poor chewing; and that poor chewing makes undernourishment and poor health. Particularly it urges that the "six year molars" of children should be watched. These are not the last of the first teeth, but the first of the last; and once gone they can never be replaced.

OPHTHALMIC EDUCATION.*

BY CLARENCE LOEB, A. M., M. D.,
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The subject of ophthalmic education might be approached from any one of several angles. In the first place, we might discuss undergraduate and postgraduate instruction, considering the essential requirements of each. Or we might lay stress upon the relation of ophthalmic to general education. Or we might concern ourselves with the strictly pedagogic aspect of the subject, and devote our attention to the number of hours required and subjects to be presented within that space of time. Or, finally, we might take a broad survey of the whole subject and consider it from the point of view of the method of its presentation to the student.

Each one of these phases of the subject is of great importance, but all except the latter have been written about and discussed by men prominent in the profession both here and abroad. I do not feel that I can add anything of importance to what they have said. In general, their opinion is that the number of hours assigned in the curriculum to ophthalmology is too few, that more stress should be laid upon the relationship between ophthalmology and general medicine, and that the student on graduation should have an accurate knowledge of the commoner eye diseases, and should be as proficient in the use of the ophthalmoscope as of the stethoscope. However, there is not wanting the opinion that the time spent in the teaching of ophthalmology to undergraduates is more or less wasted; that the student learns little and cares less about the subject, and promptly proceeds to forget what little he has learned as soon as he leaves school and has passed his examinations before the State Boards of Health. That the latter statement is true will, I think, be denied by no one who has had much to do with recent graduates, but that this is an argument for neglecting instruction in ophthalmology in the schools is not a logical deduction. It is entirely possible that something can be done to make the subject more attractive to the student; that a way can be devised of presenting ophthalmologic facts to him so that they will be more readily acquired and subsequently retained. In other words, does

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*Read before the Milwaukee Oto-Ophthalmic Society, Dec. 21, 1920.

not the fault lie in the method of instruction rather than in the subject or the student?

This question seems to me to be of the greatest importance, and in regard to it I read a paper before the American Academy of Ophthalmology and Oto-Laryngology at its 1919 meeting. The arguments and conclusions which I presented at that time did not, however, meet with favor. The trend of the discussion was opposed to my views, but conversations with several of the members at that time and later have shown me that the seed sowed did not all fall on barren ground. A very encouraging and significant feature is the fact that those who have expressed themselves favorably in regard to my position have been the younger men in the profession, men who are closer to the viewpoint of the student, while those who opposed it were from the ranks of the instructors, and naturally further removed from the days when they attended lectures. That my conclusions were rejected does not necessarily prove that they are not correct, for nearly all new methods have to combat a certain amount of opposition, but on the other hand, a method is not necessarily good because it is new. If, however, it better conforms to existing conditions, it will win its way to general acceptance, but it must be repeatedly brought to the front, in season and out of season, until it has had a chance to demonstrate its merits. Therefore, I am very grateful to you for this opportunity to appear before a Society of your standing, to present my views upon ophthalmic education. And though my subject may be ophthalmic education, my conclusions are just as applicable to otolaryngologic, and for that matter, to general medical education.

In the first place, I have nothing to urge against the method of teaching the socalled fundamental branches of anatomy, physiology, etc. My thesis is chiefly concerned with the manner of instruction in the diagnosing of diseases—that instruction that leaves the majority of graduates unable to recognize a disease concerning which they have heard lectures, and of which they have seen cases for varying periods of time. Why is it that a graduate of a reputable medical school cannot recognize a case of interstitial keratitis, although he has heard lectures on it, and probably has seen one or more cases? Why is it that he is unable to make a diagnosis between iritis and conjunctivitis, notwithstanding the fact that he has been instructed in their differential diagnosis? And yet, why is it that this same graduate can pass with flying colors an examination in which he is asked to describe these diseases? The answer to these questions is, in my opinion, the same, namely, the system of medical instruction is incorrect. And in what way is it incorrect? In the fact that the student is taught to concentrate upon diseases, when his chief attention ought to be directed towards the signs and symptoms which make up the picture of the disease. He is taught to consider *symptoms* in so far as they are manifested by a certain disease, whereas he should be taught to consider diseases insofar as they are represented by certain symptoms,—and when I say symptoms I use the word to include signs as well. Now there is a decided difference in saying that a disease shows certain symptoms, and that certain symptoms indicate the presence of a certain disease—as much difference as that between the negative and the positive in photography, or between the image and the object. In the former case, the point of view is analytic, and in the other it is synthetic.

Now, we must remember that when a patient comes to us he presents a problem whose solution is obtained by synthesizing the factors—that is to say—the symptoms present. Is it not logical to ask that our medical preparation be such as to fit us for this task? But what is the actual state of affairs? The instruction of the student is *analytic* not *synthetic*. For example, if the lecture is a didactic one, he is told that chronic simple glaucoma is a disease presenting the symptoms of shallow anterior chamber, increased tension, cupping of the disc, etc. If the lecture is a clinical one, he is shown the patient, told that he has this disease, and shown how to hunt for the symptoms to be found. But in either case it is the entity of the disease and not its component parts upon which his attention is focused, whether consciously or not.

Now, I maintain that this is teaching a man backwards; that it is putting the cart before the horse; that it is producing in the student a mental attitude which he must reverse when he starts to practice ophthalmology. His patient will not come to him and say "Doctor, I have chronic simple glaucoma; will you please see if I have increased ocular tension and contracted visual fields?" What he will say is, "Doctor, I don't

see as well as I used to, and I think I need glasses," or "Doctor, I think I have a cataract." That is to say, the diagnosis given by the patient is usually wrong, and the oculist must make the correct one. How does he do this? According to his method of instruction, he can do so only by recalling diseases and searching for symptoms which they should present. When the symptoms of the disease in his mind correspond to those present in the patient before him, he considers he has found out what is the matter with him.

But is that the way you gentlemen make your diagnoses? Not at all! You take the symptoms present and from them build your disease picture. If in the course of your examination, you find a contracted, irregular pupil, a circumcorneal injection, a deepened anterior chamber, perhaps containing altered aqueous, more or less photophobia, etc., you combine these facts with the information furnished by the history and arrive at the diagnosis of acute iritis. But where did you learn to do this? In your medical school? Not in the least! You learned it in the School of Experience, in the routine of your daily practice.

It is sometimes difficult to forget the present and recall the past; to reconstruct former forgotten conditions without confusing them with present, well remembered ones. The student of literature forgets the days when he struggled to learn his alphabet. The mathematician long since has forgotten the dreary days of fractions, and the successful practitioner never thinks of those early days when he labored long and fearfully over his first cases. But let us see if we cannot retrace our path to those early stepping stones of our present positions. Do you remember the trepidation with which you faced your first case; how all of the treasured information of your school days suddenly departed and left you helpless before an unknown condition? Do you remember how you finally decided upon a disease and gave the treatment, and how anxiously you awaited the next appearance of the patient, to see whether your diagnosis and treatment were correct? Contrast that picture with the present time, when only the more complicated eye conditions require more than a few minutes of examination, and when you give your treatment with the sure knowledge that it is correct for the condition present. What is the reason of your present ability as contrasted with your former difficulty? Is it because you have seen that particular *disease* so many times? Not at all! It is because you have seen the *symptoms* so many times that it has become almost automatic to group them into the picture of the disease. Do you say to yourself, "This is a case of acute conjunctivitis, and therefore I will find injection of the conjunctiva, discharge, matting together of the cilia, etc"? By no means. You say these symptoms are present and therefore you have a case of conjunctivitis. And again I say you have learned to do this yourself, for you were not taught it in the schools.

If you are refracting a patient, do you think, "This is a case of hyperopia, and therefore I can increase his vision by the use of convex lenses"? or do you find that convex lenses increase the vision of the patient, and from that fact diagnose a hyperopia? If you were instructing a student in refraction, would you not show him how convex lenses increased the patient's vision, and how the direction of the shadow in skiascopy was reversed by convex lenses, and then tell him that from these facts you know the patient is hyperopic? Then why not extend this method of teaching to the recognition of other abnormal eye conditions?

I well remember, from my student days, two men who lectured on medicine. One would tell us about a disease, what symptoms it manifested, how it ran its course, and its treatment—in other words, with all due respect for his memory, he was an animated textbook. When he gave a clinical lecture, he told us what disease the patient had, and showed us the symptoms for which we should look. The other man would tell us about a symptom—it might be edema—and then would explain its significance and tell in what diseases it would be found. In a clinical lecture, he would demonstrate symptom after symptom, and at the end would tell what disease the patient had. Whose instruction do you think clung to me the longest? To whom am I indebted today for the fact that when a patient complains of eyelids swollen in the morning I think of nephritis? Each man gave me the same information, but one presented it analytically and the other synthetically. And this is the criticism that I bring against medical education of today that it is analytic instead of synthetic, that it presents to the student a disease picture which it dissects into its component parts instead of directing his attention

first to the various parts and showing him how they form the disease. The former method prepares him to read a textbook intelligently, something that he is comparatively rarely called on to do. The latter would prepare him to combine the more or less accurate history furnished by his patient with the symptoms found on examination into a diagnosis of the disease present, something he must do every hour of his medical life, and something he must sooner or later learn to do if he wishes to become a successful practitioner.

Having criticised the present method of medical education, it becomes necessary to suggest an improvement, and this, in my opinion, can be brought about as I have indicated, namely, by teaching the student to recognize symptoms and to combine them into a symptom complex or disease.

First of all, the student should be taught a routine method of examination, coupled with instruction in the normal appearance of the various parts of the eye. I think in our haste to teach pathologic conditions, we assume too much knowledge on the part of the student of normal conditions. How can a student recognize an anemic or slightly hyperemic conjunctiva until he has seen a normal one? How can he estimate a pathologic pupil unless he has firmly in mind the size and shape of a normal one? I dare say that the times the average student has looked into some one's eyes have not prepared him for a knowledge of their structure and exact appearance. He is more likely to have regarded them as the windows of the soul rather than organs for translating light waves into visual sensations. But when he has learned the normal appearance of the eyeball and its appendages, and when he has learned a systematic method of determining deviations from this normal appearance, he should be taught the significance of such deviations.

Let us take the symptom of ciliary infection. I would first teach the student how to recognize it, how it is caused and how to differentiate it from conjunctival infection. Then I would inform him as to the diseases in which it is found. This same sequence should be followed in regard to all other ocular symptoms, such as pain, photophobia, lacrimation, loss of fundal reflex, etc. The next step would be to show him how several symptoms are to be found in one and the same disease, and that therefore when they are present in a patient, they indicate the presence of this disease. For example, he should be taught how to recognize a shallow anterior chamber, a dilated pupil, decrease in vision, a contracted visual field, an increase in tension and an excavated disc, and in what various diseases each symptom is found. Then he should be shown that the point of contact of these symptoms is the fact that they are found together only in chronic simple glaucoma, and should be told that when they are thus found together they indicate the presence of that disease. In clinical demonstrations, he should be asked to demonstrate the symptoms present, and to combine them into a disease complex, according to the information furnished in didactic lectures. Finally, his examination should present questions of this kind: "What disease is present in a patient, examination of whom shows the following symptoms: a, b, c, etc.?"

A student trained in such a manner would, I am convinced, be far better equipped to practice medicine than one trained according to the present one. He would be almost as well equipped as the man who has taken an additional year's training as an intern in a hospital, for the latter has simply become better acquainted with diseases from meeting them more frequently, and learning to recognize them from their symptoms—that is, he is finally obtaining the training which he should have received as an undergraduate. He has of course obtained a certain amount of dexterity and above all a high degree of confidence which comes from contact with and treatment of a large number of patients, but his superior diagnostic ability over his undergraduate years is due to his having learned to recognize symptoms and to combine them. He has learned to reverse his mental processes, a feat which requires years in the case of his less fortunate colleague who goes at once into private practice—but a feat which would be unnecessary if his training had been along proper lines. I have been connected with several hospitals at different times and have met graduates of various schools, and I have yet to meet the graduate whose diagnostic ability passed beyond that of the recognition—I would rather say guessing—of the simplest ocular conditions. It may be that the cause is a lack of interest in ophthalmology, allowing their acquired knowledge to disappear quickly, but that would not explain why a man who could not diagnose a cataract, for example,

could describe the disease on his examination paper. Nor would it explain the fact that the same phenomenon of knowledge present without ability to apply it is present in other branches of medicine. The only explanation that can be correct is that the knowledge acquired has not been imparted in a manner which permits its easy utilization, and the only remedy that I can see is to alter the method of instruction along the lines that I have indicated. This has been presented in a crude form, and certainly must be modified, but the refinements would come in the course of time. The main thing is to recognize the erroneous nature of the method used; the rest can be safely left to the future.

A PLEA FOR THE OFFSPRING OF THOSE AFFLICTED WITH SYPHILIS.*

BY JAMES C. SARGENT, M. D.,

MILWAUKEE.

The magnitude of the subject of Congenital Syphilis, together with the innumerable treatises that have been written upon it, preclude completely the possibility of presenting even a resume of the subject. Partly because of the vastness of the subject of congenital syphilis and partly because, after all, the patient's welfare is our real interest, this paper has been limited to a consideration of (1) the prevention of congenital syphilis and (2) the treatment of congenital syphilis.

Syphilis stands first among the natural causes of miscarriages and stillbirths. Kassowitz[1] states that over forty per cent of the pregnancies in syphilitic mothers result in miscarriages. Syphilis is and in spite of our best efforts probably will remain for years the greatest natural menace to the unborn child.

Colle was for a generation highly acclaimed for his teaching that a mother became immune to syphilis by giving birth to a syphilitic child. This law was of course predicated upon the false belief prevalent at the time that a child might inherit syphilis directly from the father—the mother escaping infection. In a similar way Profeta found ready belief in his dictum that a healthy appearing child born of a syphilitic mother possessed an immunity to syphilis. Profeta was not aware of what is now known to be a fact, viz: that a child born with congenital syphilis, like an adult with acquired syphilis, might appear in perfect health.

A large number of my hearers I am sure were taught the laws of Colle and Profeta in their earlier medical studies, so recently has the renaissance in syphilis occurred.

In the light of our present day blood tests for syphilis we learn that a syphilitic father will bear normal non-syphilitic children providing the mother has not been infected. In the great majority of cases the mother of a congenital syphilitic can be shown by the Wassermann test to have syphilis though she at no time in her life has had any of the manifestations of the disease. The fact that this cannot be demonstrated in every case is more probably due to the fallacies inherent in the Wassermann test than to an actual lack of infection in the mother.

In the light of our present day blood tests for syphilis we also learn that a mother known to be syphilitic may give birth to either normal or syphilitic children. Normal children born to a mother who has syphilis is not unusual. It is, however, unusual to see a normal child born to a syphilitic mother whose infection has been recent. It is perfectly apparent that as the years go by a woman is very apt to gain more or less control of her infection even without treatment so that pregnancies occurring in the later years of her sexual life are very likely to result in the birth of non-syphilitic children.

What is possibly most valuable of all, we learn by our modern Wassermann test that a congenitally syphilitic child may be born apparently healthy and continue in perfect health for a number of years before the presence of syphilis becomes manifest.

In the light of the Wassermann test then it seems proper to formulate the following laws regarding congenital syphilis:

(a) A child born with syphilis is born from a syphilitic mother. The father may or may not be infected.

(b) A syphilitic mother may give birth to either normal or syphilitic children.

With such as the probable truth it is apparent that the direct prevention of congenital syphilis lies in the recognition of and treatment for syphilis in the prospective mother. Even though

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*Read before the Public Health Section, State Medical Society of Wisconsin, La Crosse, Sept. 10, 1920.

there is very little recorded opinion on the subject it seems justifiable to believe that a clinical and serological cure of syphilis in a woman is sufficient to insure the perfect health of all children subsequently conceived and born to her. This very apparent fact is in itself sufficient to negate the all-too-prevalent opinion that intensive treatment is not indicated in women in apparent health but known to be Wassermann positive.

I have been able to follow the history of six women who were treated for syphilis and subsequently became pregnant. Five of these were treated until their Wassermann tests were negative. In all five instances a subsequent pregnancy resulted in the birth at full term of a normal Wassermann negative baby. The remaining case was one of exceptionally virulent syphilis in a woman who had received only six injections of arsphenamine and six injections of mercury. She was not heard from until eight months later when she was four months pregnant and strongly Wassermann positive. Refusing treatment then she went to full term and was delivered of a normal appearing child. Its Wassermann was strongly positive. Even this case might be claimed quite a success, however, when it is considered that this was the first of thirteen pregnancies in which this woman received a living child.

It is worthy to treat the syphilitic father intensively to forestall the advent of a tabes or paresis in later life. It is almost noble, however, to cure syphilis in the young wife that her children may see the light of day and inherit the sound mind and body that God intended they should have.

Pathologists (Schaudinn [2], Frankl [3], Bab[4]) teach us that the fetus contracts syphilis from its syphilitic mother through the placenta and it seems the general opinion that such infection takes place relatively late in pregnancy. With the highly potent forms of arsenic as a means of rapid treatment and with the Wassermann test as a control the question arises: What can be accomplished toward the prevention of congenital syphilis by intensive treatment of the pregnant mother?

Dr. Seelman of Milwaukee has kindly given me notes on one case which, added to mine, makes a total of seven cases in which syphilitic mothers were treated during their pregnancy and in which it was possible to ascertain the effect of that treatment on the child.

In all seven cases the Wassermann was strongly positive, one case being in the florid secondary stage at the time. None of these mothers had had any previous treatment.

Five of these seven cases presented themselves for treatment one at the second, two at the third, one at the fourth, and one at the fifth month of pregnancy. The treatment of these five cases varied from five to nine injections of arsphenamine and mercury throughout their pregnancy. In all five cases the pregnancies went to full term and resulted in the birth of normal Wassermann negative babies (in one instance there were twins).

Of the two remaining cases of mothers coming under treatment after being pregnant, one received but two injections of arsphenamine and those were at the seventh month of pregnancy. Needless to say, it was not a great disappointment to find this baby Wassermann positive when born. The other mother was three months pregnant when she received four weekly injections of arsphenamine which brought her Wassermann negative. She never felt life and at the eighth month delivered herself of a dead fetus which appeared to be two or two and a half months developed and was probably dead before treatment was started.

Of course this limited number of cases may or may not be of any significance but unless a remarkable coincidence has occurred it seems that a woman treated for syphilis until her Wassermann has become permanently negative may reasonably expect to have normal children from subsequent pregnancies. It likewise seems permissible to expect that intensive treatment in the early months of pregnancy will give at least good hope of forestalling the transmission of the mother's syphilis to her child.

In the past ten years, during which time the Wassermann test and arsphenamine have been in quite general use, the medical literature of the world has been flooded with innumerable treatises dealing with the treatment of acquired syphilis. In view of this it is rather singular that one still must look in vain for any well formed opinions or even comprehensive discussions on the treatment of congenital syphilis.

This dearth of literature on the treatment of congenital syphilis is probably due to the natural difficulties involved in the administration of the various drugs to children. In addition to this, however, there seems to be a marked reticence on the part of the medical profession to give children

any of the commonly used forms of arsenic. It is to be presumed that until babies are born with large superficial veins, the treatment of syphilis in infants will continue to be confined to the use of the time honored mercurial inunctions. Most children beyond the fourth year present superficial veins sufficiently large to easily permit venipuncture so that it may be hoped that as the years go by more and more physicians will outgrow their fear of the use of arsphenamine in children. As a matter of fact arsphenamine is born as well if not better by young children than by adults if the dosage is given in proportion to body weight. On many occasions it has been observed that 0.2 gr. given to a fifty pound child is born without the slightest complaint whereas the child's mother is rendered quite sick by the use of 0.4 gr.

Mercurial inunctions seem perfectly adequate to control all manifestations of syphilis in an infant. Even though neutral arsphenamine in suspension may be given intramuscularly to the smallest child it is questionable whether mercurial inunctions given periodically throughout the first few years of the child's life is not sufficient. As a rule several years of inunctions are not sufficient to result in a serological cure. By that time, however, it is usually possible to give arsphenamine intravenously.

In reviewing the records of some one hundred and fifty cases of congenital syphilis it has been surprising to note the number of these kiddies who have been rendered Wassermann negative by treatment. Particularly surprising indeed when it is considered that their treatment has been, by nature, much more difficult than the treatment of adults with acquired syphilis.

The work with these kiddies has been especially vexing because of the extreme aversion that all children have against the taking of medicine. The rather prevalent indifference that mothers have toward the cure of syphilis in their children is a sad commentary upon the information that they have received regarding the seriousness and possible consequences of the disease.

Because of this indifference on the part of both mother and child it has been possible to keep only some forty of these children under treatment for anything like an adequate length of time. About half of these forty children were infants one or two years of age and their treatment consisted only in the use of mercurial inunctions off and on over a period of from one and a half to three years. The iodide of potash was of course given when indicated. The remaining half of these forty children were older and were given from three to twenty injections of arsphenamine in addition to the regular mercurial treatment.

Of the infants receiving only mercury over a period of from one and a half to three years it was found that about one-fourth of them were rendered Wassermann negative. Of the children receiving both arsenic and mercury in anything like adequate amounts it was found that over half were rendered Wassermann negative and a distinct diminution in the positive degree of the Wassermann was found in about seventy-five per cent of cases.

A negative Wassermann following treatment of a congenital syphilitic, like that of an acquired syphilitic, is very prone to be only temporary if treatment is discontinued. It does not however follow that a negative Wassermann is of no significance. A negative Wassermann following treatment simply means that without further treatment there is a great possibility of the Wassermann returning positive: that with a sufficient amount of additional treatment the child can be rendered permanently Wassermann negative and probably cured.

In closing may I reiterate my plea for the child whose sad misfortune it is to be born to the life of a syphilitic. If unaided in its struggle it has but a half chance of opening its eyes to the world. If it is fortunate (or should we say unfortunate) it is but born to a life of misery and suffering and if, perchance, it survives the physical trials of early childhood it may then but faintly hope to enjoy the privilege of health, home, and happiness.

Our part in the prevention of this unfortunate cycle must lie in three activities:

(a) The intensive and prolonged treatment of all syphilitic women in the childbearing period.

(b) The intensive treatment of all syphilitic women in the early months of pregnancy.

(c) And last, but not least, the intensive treatment with both arsenic and mercury of all congenitally syphilitic children.

[1]Kassowitz: See Osler's Medicine.

[2]Schaudinn: See Heynemann: Prakt. Ergebn. d. Geburtsh. u. Gynak, 1911, iii, 40.

[3]Frankl: Monatschr. f. Geburtsh. u. Gynak., 1910, xxxi, 173.

[4]Bab: Ztschr. f. Geburtsh. u. Gynak., 1907, lx, 161.

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EDITORIALS

BELIEVE

BELIEVE in yourself. You must be the builder of your life. The dreams you dream and the visions you see shall be realized if you will make the resolution, pay the cost, do the work and keep straight onward toward your purpose. From the desk at which you sit, the position you occupy, with the same temptations that try you, others have risen to success. You can do what they have done. Believe in yourself.—Selected.

HELPING THE COUNCIL.

IF they were built that way, the members of the Council on Pharmacy and Chemistry of the American Medical Association might become discouraged at the apparent indifference of many members of the medical profession to their efforts. There are many physicians who, while figuratively patting the Council on the back, actually do nothing to aid its efforts. On the other hand, there are men in the profession who give the Council active support instead of merely passive appreciation. The letter that follows was written by such a man to a pharmaceutical concern:

"I am receiving circular advertising from you concerning ——— ——— solution, and I am writing to suggest that until these products have been approved by the Council on Pharmacy and Chemistry of the American Medical Association, you are wasting your postage on the practice. Aside from the fact that these products do not appeal to me personally, I feel that I am not in a position to judge the value of such products and I depend entirely on the large clinical opportunities of the Council on Pharmacy and Chemistry of the American Medical Association, in addition to their laboratory facilities, in such matters as these. I may therefore, with all due respect, suggest that . . . it will pay you to eliminate my name from your mailing list."

The members of the Council on Pharmacy and Chemistry are working week in and week out without remuneration. Few appreciate how much these scientific men are doing for rational therapeutics; fewer still realize how much has been accomplished through their efforts, or how much more could be accomplished if every physician who at least believes in the work of the Council would give it his full support.

WHY GO TO THE CITY?

THE April number of the Journal comments upon the shortage of country doctors. There was a time when the words "country doctor" were used as a term of disparagement by some people, even by some city doctors. The great physician and surgeon of the city, of course, never used the term in that way, because the chances are, that at one time, in the incubation period of his greatness, he himself was a country doctor.

It is a well known fact that, formerly, many of

the deservedly successful city doctors laid the foundation of their city success during their years of country practice. They had accumulated an enormous amount of self-reliance, that sine qua non of success, by being compelled to do things, and do them alone, because no assistance was near and no specialist quickly available. To a limited extent these conditions operate even today. There can be no denial of the fact that practice in the rural districts makes for self-reliance. The result is that the average rural physician is able to treat cases satisfactorily, which the average city physician would send to the specialist downtown.

The success achieved in the city by the erstwhile country practitioner made the other rural doctors ambitious, and there was established a regular and increasing tide of medical immigration from the country to the city. Consequently our cities are fully supplied with doctors while the country districts have not quite their quota. The shortage, however, is not serious, because good roads and the automobile make it possible for the physician to serve a much more extensive territory than formerly.

This trend from the country to the city is growing less, but there has arisen a new flow of physicians to the larger towns, and that directly from the school to the city. Evidently the new doctors are following the Rev. Frank Crane's advice to the youthful M. D.: "If you are a young graduate from a medical school, don't go to some forsaken neighborhood where there are no doctors; go where physicians flourish. Where the carrion is, there the eagles gather together, and where no eagles hover there is a slim picking."

Country practice has changed greatly in the last generation, and the country doctor is no longer found at the lonely crossroads. As farming districts have become more thickly settled, small cities and villages have grown up and become the community centers for several thousand or more families, and there you will now find the present day country doctor.

The life of the country physician is no longer the lonesome existence of a generation ago. The small town doctor is generally looked upon as one of the influential citizens of his community. He is at least a cog in the community wheels. Compared to the indifferent position in affairs held by the ordinary city doctor, his country colleague is a regular "devil in his own home town."

The practice of medicine in the country now-a-days is rather a pleasant vocation. A small town now has its water and sewerage systems, electric lights and power, its movies and chatauquas. It has its high school, dancing class, and bowling and bridge clubs. It has its churches, lodges, and advancement society, to all of which the doctor belongs, and of which he is an important member. The doctor has his steam heat, his piano and victrola; and when he wishes to see "Friendly Enemies" or the Winter Garden Review, he has but to take the afternoon limited and the dramatic and terpsichorean artists are his to enjoy, the same as the city physician. The small town doctor today has all the advantages enjoyed by the city physician except the hospitals and the clinics. For some reason the city doctors do not attend the clinics. Go there and you will find that the attendance is made up mostly of outside doctors.

In the matter of hospitals, conditions have changed greatly in the last two decades. Many of the smaller towns now have a hospital; and the country doctor and his patient have access to it. Country roads have improved to such an extent that the matter of transporting a patient twenty miles to a hospital is not much more of a hardship than it would be to take a ride in the city ambulance.

The time is coming, and soon, when the disadvantages of country practice will be almost entirely eliminated. Small community hospitals will increase in numbers, and the pathological and X-ray laboratory will be more readily available. In many small communities the physicians will form groups to take care of the practice in that community. This will make it possible for all in their turn to attend courses of study in the larger medical centers, and in that way it will be possible to give better service and reap the reward that must come as a consequence. When that time comes the new physician, realizing that the facilities for doing good work can be had even in the rural districts, will no longer feel impelled to go to the cities which are already overcrowded, and thus the shortage both in numbers and in quality will be remedied, and the benefits will redound to both the doctor and the rural community.

So the future country doctor will stay in the country. He will make his periodical visits to the clinics, but he will return again to where he can walk down "main street" and every one he meets

greets him, and even the children smile and shout "hello" to him. He is going to stay where he is identified with the advancement of his community, and where he is an important and recognized part of everything in his community that spells progress.

LONGINUS.

(A Country Doctor and County Secretary.)

THE DEFENSE FEATURE OF THE STATE MEDICAL SOCIETY.

THE following information is offered for the benefit of members of the Society who may not have kept themselves informed on this phase of its activities by following the annual reports of the Committee on Defense.

The committee consists of five members of the Society who are elected annually by the Council. Members threatened with malpractice claims should promptly write to the secretary of the committee under address of the Secretary of the State Medical Society of Wisconsin, (at present Dr. Rock Sleyster, Wauwatosa), and state in the first communication all the material dates and facts in the case (not merely the facts which they may consider of importance). Before the committee can refer a case to the attorney for the Society it must be informed of the salient facts in the case, including always the date or dates on which the services which are alleged as the basis for the complaint were rendered. As soon as this information is at hand, if the member is and has been in good standing, the matter is turned over to the Society's attorney.

A member who, through non-payment of annual dues or for other cause, was not in good standing at the time when the services complained of were performed, or who has subsequently lapsed his membership and has not been re-instated by his County Society before the time when suit is brought or threatened, is not entitled to the aid of the Society in his defense. In other words, non-payment of dues at the proper time has the same effect as lapsing a policy in an insurance company.

If members who are threatened with malpractice suits will promptly report the matter in the manner above indicated, it will not be necessary for them to employ a private attorney, as the Society will assume the entire defense without expense to them. Those who carry other insurance also, should of course not fail to conform to all requirements of their policies. The State Society will defend the member, but will not pay any damages in case such should be awarded. Since the adoption of the defense feature by the Society in 1908, very few judgments against doctors have been obtained and a large proportion of these were reversed by the Supreme Court. H. R.

WISCONSIN AND TUBERCULOSIS.

EVERY citizen of Wisconsin has reason to be gratified over the progress that has been made toward the ultimate control of tuberculosis. Wisconsin has the fourth lowest death rate from this disease of any state in the registration area and a lower rate than any eastern or midwestern state.

So far as we have been able to observe, the people of no state in the Union have shown a greater sense of personal responsibility for the existence of the problem or seized more enthusiastically upon the opportunity to battle the problem to a finish. The medical profession has been back of the movement from its inception and is entitled to credit itself and be credited for its full share of glory for what has been accomplished.

That there still remain, however, even in this most enlightened state, physicians who fail to diagnose the existence of the disease before diagnosis is so obvious that "he who runs may read," must be admitted.

That there are others who ignore the existence in Wisconsin of one of the best chains of small tuberculosis sanatoria to be found anywhere in the world must also be admitted.

And we fear there still remain those who, for selfish and pecuniary reasons, deliberately "hang on" to their patients until all hope of cure that the sanatorium treatment might have held out has gone a-gleaming.

Summing up our professional assets and liabilities, however, leaves a handsome balance of credit for the Wisconsin medical profession and it is our hope that, contemplating our gains, we will see the opportunities ahead for increasing them and that, as time goes on, it will be increasingly difficult for the physician who does not meet his responsibility in the face of this great disease problem to retain his cast in the most noble and altruistic of professions.

DO UNTO OTHERS—

IF—you had not been feeling quite right for some time, AND

IF—you tired more easily than you did six months ago, AND

IF—you had lost your pep, AND

IF—you had gradually lost weight which you could not explain, AND

IF—you perhaps had a cough, only a slight one to be sure, AND

IF—you had consulted one of your colleagues, AND

IF—after percussing and auscultating and fluroscoping you, AND

IF—he had suggested a sputum examination, and a report came back negative, AND

IF—he did all these things a number of times, AND

IF—he then told you that you probably had incipient tuberculosis, AND

IF—he told you that you had better wait for a positive sputum in order to make a positive diagnosis, AND

IF—you did so and waited six months, AND

IF—at that time the sputum was positive, AND

IF—the diagnosis then was moderately advanced tuberculosis, WOULD YOU—WOULD YOU CONSIDER THAT YOU HAD BEEN GIVEN A SQUARE DEAL?

AS OTHERS SEE US.

THE MISTAKES OF STATESMEN VS. DOCTORS.

We sometimes hear loud laments over the mistakes of doctors, but what of the mistakes of statesmen? For six years the mistakes of statesmen have turned the world mad, one costly blunder following another in orderly sequence. The occasional mistake of a physician at rare intervals and under unusual circumstances may cost a single life, but the mistakes of statesmen in these six years have cost the world 12,000,000 lives and the fighting still goes on! And scarcely a word of criticism is heard of it. The statesmen get the honors, medals, citations, and honorariums of the world; the doctor the black balls, anathemas, scoldings and penalties. For one, the wine; for the other, the hemlock. A queer world, but it's getting better and in this is our hope.—Pocket Quarterly.

A NEW CODE OF ETHICS.

Three Philadelphia physicians who operated a laboratory during the war to manufacture a certain medicine for soldiers theretofore obtainable only in Germany, have given their entire profits of $500,000 for the support of medical research and the amelioration of the physical ills of mankind. This action is so unusual that it is creating something of a sensation. That any one should surrender war profits for the benefit of fellow men is contrary to the rules laid down by "Big Business."

When the world war got under way the essential German specific was shut out from this country. Dr. Frank Schamberg, Dr. John A. Kolmer and Dr. George M. Raizess of Philadelphia, through experiments, soon evolved a drug, said to be a great improvement on the German product. It was supplied to the government in plentiful quantities at a price agreed upon. When the war was over the doctors' ledger showed a profit balance of half a million dollars. Last week a check for this amount was presented to the Dermatological Research Laboratories of Philadelphia to be used in the study and preparation of remedies for the benefit and improvement of human beings.

Why not make a place for these gentlemen in the Hall of Fame?—The Milwaukee Leader.

UNFAIR TO THE DOCTORS.

Two hundred doctors throughout the country are organizing a drive on congress to save them from the comic page. They realize that the beer prescription is certain to put the noble and honored healing profession in the same class as the maligned mother-in-law and the slapstick comedian. The doctor as a bartender will alternate with the powdered knee and the waist that is nothing but a bib and a belt. The public will be grieved and shocked. It will sympathize, but it will laugh.

And on the other hand, other doctors are protesting to the Wisconsin legislature against the

bill to limit the fee for beer prescriptions to $1. Which creates the paradoxical situation of opposition to beer prescriptions both by the doctors that want to write them and by those that don't.—The Milwaukee Journal.

SUBSIDIZING THE COUNTRY DOCTOR.

From year to year medical education in the United States is becoming more systematic, more thorough, more scientific. Incidentally, it becomes more prolonged, more expensive, more difficult to attain. The earlier custom of studying with an old practitioner has long been abandoned; now the smaller medical schools, where a training could be had at a reasonable cost, though without the wide clinical opportunities of the great city hospitals, are one by one going out of existence. The standard of professional education has been raised remarkably during the last generation, but there are some disconcerting results.

It is becoming harder and harder to get competent medical service in the rural parts of the country. The tendency of the great schools is to turn out intensively educated specialists, who can make a living only in the larger cities, and to make the business of getting a degree so expensive that the young doctor is not willing to consider the physical hardship and the small income of an ordinary country-practice. That kindly, wise and patient figure of our childhood, the country doctor, becomes every year scarcer. We do not know whether the situation is so serious in other parts of the country as it is in New England, but there nearly half of the towns in the farming country are without a physician of any kind. The automobile helps by enlarging the radius of a town doctor's practice, but even so scores of communities are so far from a physician that it is almost impossible for a sick person to get any regular medical attention during that part of the year when sickness is most prevalent.

The need is such that a good many towns are subsidizing physicians—offering them from the town funds a certain annual guaranty if they will come and settle there. It is a curious semi-Socialistic arrangement, to which the towns are turning not from choice but from necessity. The towns that are first in the field—some of them, at least—are getting fairly competent young men. Whether the good men will be willing to stay remains to be seen. There certainly are not enough good men left to go around. Many of the smaller towns must still go without a physician.

"It will do them no great harm," say some; "we depend much more than we need to on the doctor nowadays; we run to him with every little ailment, however unimportant." Perhaps; yet a physician who knows his business saves a good many lives in the course of a year. It is a pity that so many of our country people find one beyond their reach. —The Youth's Companion.

WELCOME THE DOCTORS.

Doctors are pretty high-grade men, generally. By the nature of their calling they cultivate brains and industry. They are generally among the leading spirits of their community in matters of public welfare of all sorts, and their close touch with suffering makes them sympathetic in the human way. Doctors have a faculty for making and holding friends. Whether that is because the medical profession makes a man so, or whether it is because that sort of a man is drawn into the medical profession by natural bent we are unable to say, but the truth is generally acknowledged.—The La Crosse Tribune.

THE COST OF TYPHOID.

The recent typhoid epidemic as Salem, Ohio, is estimated to have cost approximately $450,000, reckoned as follows:

State emergency appropriation	$ 5,000
Red Cross allowance	50,000
Municipal appropriation	15,000
Medical expenses ($50 for each of 850 patients)	42,500
Private nursing expenses (200 cases at $100 each)	20,000
Loss of time by wage earners (one-third of patients at $5 a day for six weeks)	60,000
Funeral expenses (50 deaths at $150 each)	7,500
Value of lives lost on basis of $4,000 for each one	200.00
Business losses due to lowered earning power and to avoidance of city by persons from outside	50,000
Total	$450,000

The economic disproportion between cause and effect is clearly seen in this case. The water supply of the town became contaminated by a broken tile pipe used for transmission of the water. This tile pipe had been installed instead of iron pipe, before the state regulation of water works systems, at a saving of $1,500!

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HYSTERICAL HEMIPLEGIA IN A SYPHILITIC.

BY M. KASAK, B. S., M. D.,
WISCONSIN PSYCHIATRIC INSTITUTE.

R. L., male, 27, ex-service man, married. Father, civil engineer, alcoholic, emotionally unstable, divorced by mother when patient was about six years of age. Patient delicate until four years of age. School from seven to seventeen, finished high school, learned easily. During adolescence joined Navy and after about three years he ran away, but then went back and a short time afterwards received his discharge. Worked at various jobs; quite successful. During the Great War served with A. E. F., for thirteen months. "Shell-shocked" March 21, 1918. Was amnesic, hemiplegic, and paraphasic for three months following. Since then improved but hemiplegic and suffers from attacks of unconsciousness. Shows emotional instability, alcoholism, and criminal tendencies.

February 20, 1921. *Mental Examination.*

Attacks of unconsciousness occur at irregular intervals. During some of these attacks, patient is completely unconscious, while during others, he feels, hears, sees, but is unable to move or to say anything. At times has automatic states suggesting equivalents of hysteria or epilepsy. Emotionally he is unstable, frequently excitable with a tendency to be despondent and brooding, while at other times hopeful and happy. Normal accessibility, cooperativeness, and quiet motor status. Consciousness, clear. Voluntary attention, good. Associations, normal range. Thought, clear, relevant, logical, and coherent. No hallucinations and delusions. Memory, good. Orientation, clear. Judgment and insight slightly defective. Mental age, Binet-Simon Stanford Revision, fifteen and one-half years (average adult intelligence).

Physical and Neurological Examinations.

Height 6 feet plus. Weight 179 pounds. Sthenic. Paralysis, left side. Skin pale. No eruptions. Thyroid, palpable. Temperature, 98.2 —Pulse, 90—Respiration, 22. Chest—Ludwig's angle, prominent; infra and supra-clavicular fossae, moderately deep. Lungs, normal. Heart, negative. Blood pressure, systolic 119, diastolic 88.

Cranial Nerves.

Cornea clear. Vision, acute on right. *Complete anosmia on left. Amaurosis and photophobia on left; unable to count fingers six inches away from eye;* distinguishes only between light and darkness; cannot see movements of fingers when hand is moved in front of him. Pupils, mid-dilation, equal, fairly regular, *react to light and accommodation,* directly and consensually. No strabismus. Nystagmoid movements on lateral deviation of eye balls to right and left. No Stellwag, Graefe, or Moebius. Optic discs, normal. *Facial weakness on left. Tic-like spasmodic movements, more marked on left side,* especially in the upper branches of facial. These tic-like movements are increased when light is thrown into pupils for examination. *Hearing markedly impaired on left. Complete ageusia on left. Complete anaesthesia on left, ending promptly in mid-line;* this includes skin as well as mucous membrane, tongue, and conjunctiva.

Spinal Nerves.

Motor: *Complete semi-flaccid paralysis on left. Complete anaesthesia and analgesia, including bathyanaesthesia, on left, ending at mid-line;* includes face and extremities. Deep reflexes: biceps, triceps, knee jerks, and tendon Achilles are lively, more so on right. Epigastric and abdominals are present on right, *absent on left.* Cremasteric, bilaterally present. No ankle or patellar clonus. Chaddock and Babinski show spreading and dorsiflexion of little toes on right; *normal flexion on left.* No Gordon or Oppenheim. No hypotonia of knee joints.

Co-ordinated Movements.

Ataxia in facial muscles and *left leg.* Speech, hesitating, somewhat slow at times. Gait hemiplegic. Station, can stand unsupported on narrow base, but sways. Romberg, swaying not increased on closing of eyes.

DISCUSSION.

This case is interesting in many aspects, but we can discuss it here only in one, namely, the necessity of a complete neurological examination. We are told that hemiplegia of sudden onset in

a young individual, provided organic heart disease is excluded, means usually syphilitic blood vessel disease, i. e., erosion of the lenticulo-striate artery of Duret, which Charcot called the artery of cerebral hemorrhage. The patient is undoubtedly syphilitic as evidenced by several 4 plus Wassermann reactions on blood. The cerebrospinal fluid, however, is entirely negative. The neurological examination excludes an organic disease of the central nervous system. The hemiplegia is not characterized by signs of corticospinal (upper) neurone lesion, such as spasticity, hypertonicity, hyperactivity of tendon reflexes, pathological toe signs, and ankle and patellar clonus. Suspicious Babinski and Chaddock signs consisting chiefly in spreading of toes are frequently seen in hysteria and do not point towards pyramidal lesion. Likewise the signs of spino-muscular (lower) neurone lesion are absent. There is no flaccidity, hypotonicity, nor muscular atrophy. The distribution of the paralysis and anaesthesia do not correspond to any cord segment or peripheral nerve. The anaesthesia ends sharply in mid-line.

Moreover, it is of particular interest to emphasize the inability to smell when a volatile non-irritating substance is inhaled in the left nostril and likewise the inability to taste quinine, sugar, common salt, and citric when a few drops of solution are placed on the left side of tongue, in spite of the fact that a diffusion over to the right side is unavoidable and actually does take place. He is able to smell and taste when the right side is tested. Such selective anaesthesia of the special senses could be nothing but a psychic refusal to recognize, in other words, a mental state and not an organic lesion.

Further, the fact that patient is blind and photophobic on left, but shows normal pupillary reactions in his left eye, indicates that the lesion is beyond (centrally of) the primary visual centers in corpora quadrigemina and beyond the reflex arc, in other words, cortical or sub-cortical. But a cortical or sub-cortical lesion on right side would cause left homonymous hemianopsia, which the patient does not have.

A combination of undoubted syphilis associated with a very evident hemiplegia might easily be diagnosed as meningo-vascular syphilis. Yet, further examination in this case clearly reveals the hysterical character of the nervous lesion and its independence of the syphilis that is present. It is interesting to note that this case shows a completely negative cerebrospinal fluid. This finding is additional evidence of the non-syphilitic character of the central nervous involvement.

This case illustrates very well that even the usual physical examination gives valuable neurological information, which, when correctly interpreted, clinches the diagnosis. With modern advance in laboratory technique, the physician in his diagnosis is liable to depend almost solely upon X-Rays, Wassermann reaction, and electrocardigrams and neglect the routine physical examination. The diagnostician has still to follow in order the usual methods of inspection, palpation, percussion, and auscultation. He must percuss not only the chest but also tendons for reflexes and scratch the soles for pathological toe signs.

PAPILLITIS; GLIOMA OF THE BRAIN.

BY G. N. BRAZEAU, M. D., D. OPH., F. A. C. S.,
MILWAUKEE.

Inflammation of the terminal end of the optic nerve is of two kinds. The first, essentially inflammatory in nature, reveals all the characteristics of true inflammation and manifests itself by purely functional troubles. The second variety, with which this paper will deal, is papillitis by stasis, of von Graefe. These two types are not as markedly different as one might at first believe, so, in view of their different consequences, they should be considered separately as distinct morbid entities. The papillitis by stasis will be best illustrated by reviewing a case that consulted me for failing sight. Briefly, this is the history:

A man, age 60, nationality Irish, a farmer, history good, has always been well and strong up to about the time his sight began to fail. This was his chief complaint. There was no headache, no vomiting, nor paralysis. V 20/50. The eyes appeared normal. Fundus examination showed a typical picture of bilateral papillitis, with its tortuous and engorged veins and filiform arteries. The nerve head looked like a mushroom, projecting into the eye. There were no signs of retinal hemorrhages and the borders of the disc were very blurred in the mass of edematous swelling and capillary distension. Further observation revealed recurring spasms of the muscles of the right side of the face, motor aura, like a grimace. Dur-

ing these spasms there was a tendency to fall forward, though no loss of consciousness. These spasms would last about a minute to recur again at varying intervals during the day. Here was a typical case of Jacksonian epilepsy of the facial type. The diagnosis seemed easy in such presence; it was papillitis due to a tumor of the brain, with Jacksonian epilepsy.

The character of the neoplasm was undetermined as the case was lost to further observation. The good history of the patient assisted materially in differentiating between a neoplasm and the various other causes capable of producing such papillitis. There were no evidences of either meningitis, tuberculosis, syphilis or sinusitis.

Gliomas of the brain substance probably lead in frequency and in malignancy among the brain tumors. However, independent of its nature there was a tumor, most probably a glioma involving the inferior cortical portion of the ascending frontal convolution. From the restricted epileptiform seizures, we can assume the tumor to be a small one. It is regrettable that the Roentgen rays should be powerless to assist us in either localizing or determining the size of these tumors of the soft tissues, for only where deposits in these growths occur, is there sufficient visibility to be worthy of attention. Thus are we referred to the autopsy room for positive information. In choked disc, the vision may be but slightly altered, while inversely, there may be marked diminution in vision and color, with no ophthalmoscopic findings in the first form. A periodic loss of vision testifies to a tumor. These, together with the Jacksonian epilepsy, leave no doubt as to the cause of the papillitis. In one hundred cases of brain tumor, papillitis was present in 95% of them. Among the many reasons given in explanation of this edema, that of obstruction to the returned circulation has received the most credence. It was Graefe's idea. The edema in and about the nerve are explainable on the grounds of the intercommunicability of the spaces between the membranes covering both the brain and the optic nerve, as the latter membranes are but a continuation of the former serving the nerve as sheaths that extend even unto its entrance to the sclera.

The prognosis, in cases such as this, where the edema papillaris is due to pressure, is distinctly dependent upon the cause and its amenability to treatment, as well as on the time of its duration. In impaired vision, where relief is at our command, the prognosis is naturally better the earlier intervention is initiated. In malignant growths, or those more inaccessibly placed, or because of extensive metastasis, the prognosis both as to life and vision is of the worst. With the progress of disease, other symptoms, more complicated and disheartening appear, until finally death supervenes to end the tragic scene following coma, paralysis, hemorrhage, or all. With the present advance of brain surgery, cases seen early may and have been very happily benefitted. In papillitis, due to sphenoidal sinusitis much hope can be entertained owing to the ready accessibility of this sinus to surgical and medical intervention.

POSTGRADUATE MEDICAL COURSES.

Last summer there was a series of ward classes held at the Milwaukee County Hospital, Wauwatosa, just outside of Milwaukee, in which a number of physicians from the state participated. The success of these classes has led some of the members of the staff to plan a series of courses according to the schedule here appended.

Every course will last two weeks. Anyone wishing to take four weeks can do so. The courses will begin Monday, July 11th. It is planned to give three this year, viz.: July 11-July 23; July 25-August 6; August 6-August 20.

Those desiring to enroll may communicate with the Superintendent, Milwaukee County Hospital, Wauwatosa, Wis.

The men who are giving the clinics and lectures prefer to have not more than ten men in any one course. The instruction is individual, with bedside clinics, and it will be better for all if the class is small.

There is no fee attached to the course. The schedule follows:

MONDAY.

9-11 a. m.—Medical Ward Rounds, Dr. Warfield.

11-12—Pediatrics Rounds, Dr. A. B. Schwartz.

12-1—Luncheon.

1-2 p. m.—Clinical Miscroscopy, Blood Chemistry, Dr. Margot.

2-5 p. m.—Ward examinations.

TUESDAY.

9-11 a. m.—Surgical Operative Clinic, Dr. J. L. Yates.

11-12—Medical Clinic, Dr. Warfield.

1-3 p. m.—Ward examinations.

4-5 p. m.—Gynecology Lecture (Med. Library Lecture Room), Dr. Davis.

WEDNESDAY.

8:30-11 a. m.—Gynecology and Obstetrics Clinic, Dr. C. H. Davis.

11-12—Dermatology, Dr. Harry Foerster.

1-2 p. m.—Serology, etc., Dr. Margot.

2-5 p. m.—Ward examinations.

THURSDAY.

9-11 a. m.—Medical Ward Rounds, Dr. Warfield.

11-12—Clinical Pathological Conference, Dr. Warfield.

12-1—Luncheon.

1-3 p. m.—Ward examinations.

4-5 p. m.—Pediatric Lecture and Clinic (Children's Free Hospital), Dr. Schwartz.

FRIDAY.

9-11 a. m.—Surgical Operative Clinic, Dr. J. L. Yates.

11-12—Pediatrics Rounds, Dr. Schwartz.

1-2 p. m.—Clinical Microscopy, Dr. Margot.

4-5 p. m.—Gynecology Lecture (Med. Library Lecture Room), Dr. Davis.

SATURDAY.

9-11 a. m.—Orthopedic Clinic, Dr. F. J. Gaenslen.

11-12—Pediatrics (Home for Dependent Children), Dr. Dirk Bruins.

CHOLECYSTITIS AND CARCINOMA OF PANCREAS.

CLINIC OF EUGENE E. TUPPER, M. D.,

LUTHER HOSPITAL,

EAU CLAIRE.

Case No. 12676—Cholecystitis and Carcinoma of Pancreas.

This patient was a well nourished woman, a widow 55 years of age, the mother of five children. Her father died at 65, the cause of death unknown. Her mother died at 36 of puerperal septicemia. She has one brother in Dunn County Asylum, and two sisters, who are living and well. She had measles in childhood, and inflammatory rheumatism six years ago, and was sick about six months. Four of her labors were normal, but the fifth and last one was very difficult, and she had a prolonged convalescence. She experienced the menapause at 43, and has had no flow since.

She came to me May 19, 1920, complaining of attacks of severe pain in the epigastrium and the right hypochondriac region. At times this pain was fairly constant, with a feeling of fullness in the epigastric region. She had experienced some minor gastric disturbances for the past two years, but not until January, 1920, did she suffer enough to seek relief. Her pain had no relation to her taking food. Food did not increase the pain, as a rule, or relieve it. It was not referred to the subscapular region. She had no sour stomach, was nauseated, but did not vomit. During the past four months her appetite had been very poor, and she had lost about 15 pounds. Her pain was not of the colicky type, and she had never been jaundiced. She bloated a great deal, and was constipated. Her physician put her on a milk diet with no relief.

Physical Examination: Temperature 98. Pulse 78. Respirations 20. Blood Pressure 140-96. Hemoglobin 62. Red blood cells 3,300,000; White cells, 5,600. Urine negative. Examination of gastric contents after Ewald Test breakfast was negative.

She had artificial teeth only. Throat was negative. Neck and chest were negative. Heart was regular when quiet, but intermittent on exertion. Apex was in nipple line. No murmurs. Lungs were negative. Examination of abdomen revealed marked tenderness over the gall bladder region, and a palpable mass, which moved with respiration. There was unusual resistance in the epigastric region. The abdomen was somewhat tympanitic. The examination in other respects was negative.

In reviewing this history we find that this patient had minor digestive disturbance for about two years, and then rather suddenly in January, 1920, she began to experience severe pain in the epigastrium and right hypochondriac region. The pain became more constant and a feeling of fullness developed under the costal arch. She had no sour stomach, she had no emesis, and food did not increase or relieve her pain. She frequently experienced nausea. The milk diet instituted by her physician gave no relief. The total acidity after an Ewald Test breakfast was within normal limits. Thus we can exclude ulcer or cancer. This palpable mass in the region of the gall bladder moved with respiration, so it could not be connected with the kidney or pancreas. It undoubtedly was an enlarged gall bladder. I made a diagnosis of Cholecystitis, rather than Cholelithiasis, because she had no jaundice, no attack of colic, no referred pain to region of the scapula. Frerich claimed that seven out of every ten cases of gallstones have pain referred to the scapular region. So the evidence was strongly in favor of Cholecystitis.

On May 24, 1920, she was subjected to operation:

A considerable straw colored fluid was found in the abdomen. The pelvic organs and appendix were found negative. The gall bladder was buried in adhesions; these adhesions extended onto the colon and pylorus. No evidence of ulcer of the duodenum or stomach could be found. The pancreas was much enlarged and hard. The gall bladder was freed from the adhesions, and no stones could be felt in the gall bladder or its ducts. The free fluid and the enlarged, hard pancreas presented possibilities of the pancreas being carcinomatous. But if it should be a chronic pancreatitis, I felt that the drainage of the gall bladder promised the best results for the patient.

The gall bladder was full of a thick, black, tarry substance which was cleaned out, and no stones were present. Drainage was placed in the gall bladder, and in the kidney pouch, and the abdomen was closed. Bile began to drain before the dressing was completed.

She ran an uneventful course until June 12. The drain was removed on the 8th, and she was allowed out of bed on the 9th. On the 12th, the urine was noticed to be very dark, and her eyes were slightly icteric. She was kept in bed for a few days, and the urine became bile free, and remained so for five days, after which it contained bile more or less of the time. She was feeling fairly well, and was allowed to leave the hospital July 4th. She had rather a stormy time while away, and reentered on July 15th.

The question arising, of course, was whether this really was a carcinoma of the pancreas which had invaded the ducts, or whether I might not have injured the bile ducts in the operation. Thinking there might be a possibility of giving her relief by a secondary operation, I decided to try it. So on July 27, I undertook to reoperate her. The coagulation time of her blood was eight minutes. But on making the incision through the superficial tissues she bled profusely, and nothing would stop it for altogether too long a time. I backed out and sewed up the incision. She continued to bleed for three days, and finally the pressure from the accumulated blood stopped it. The clotted blood was finally removed. Her condition continued to get worse, until Sept. 17, when she began to have intestinal hemorrhages which continued daily, and were the immediate cause of her death on Sept. 22.

Postmortem Findings.

Abdomen opened. A loop of bowel was found adherent to the abdominal wall. The cecum presented itself much enlarged. Tracing the ascending colon up to the hepatic flexure it was found incorporated into a large tumor mass, which was the enlarged pancreas. This mass was very hard and nodular, and it incorporated the common and cystic ducts, so no bile could find its way into the gall bladder or duodenum. A loop of small bowel was attached to the mass, and the growth had broken through the wall of the bowel. Evidently the hemorrhage was coming from this point. The pancreas was positively carcinomatous.

A CASE REPORT OF GLIOMA OF THE BRAIN.

BY J. P. ZOHLEN, A. M., M. D.,
SHEBOYGAN.

The following case is presented on account of the unusual opportunities it furnished for clinical study and the facility of verifying the findings by autopsy.

Patient—Mrs. E. S., age 33, was first seen by me on October 29, 1920. A hurried history and physical examination were made at the time and in view of the history and uncertain physical findings the patient was advised to go to the hospital for observation and diagnosis. This she consented to do and entered the hospital the following day October 30, 1920. The following history was obtained at this time:

Family History: *Father* age 60, living and always well. *Mother* age 62, living and always well.

Brothers: Three living and well; none dead.

Sisters: Four living and well; one dead.

Husband: Age 33 years, living and well.

Children: One child 5 years old, living and well. None dead.

Past History: No diseases of childhood. In fact patient stated emphatically that she had always been well until present trouble began in April of 1919. Her habits had always been exemplary. She stated that she had been in the care of 6 or 7 physicians during past 1½ years for her "stomach and abdominal trouble," but without relief. Patient stated that she was getting worse as time went on. There was no history of any

miscarriages; neither of syphilis, gonorrhea or injury. Menstruation more or less regular and normal since age of 15.

Chief Complaint: Patient's chief complaint was vomiting and periodic pain in abdomen since April, 1919. She was so firmly imbued with the idea of her abdominal disturbances and her mind so concentrated on the abdominal symptoms that it was with difficulty that patient could be diverted and questioned as to any other symptoms. Upon close questioning she admitted also having had during past months attacks of headaches, dizziness, disturbed vision, numbness of hands and feet and chilliness, but adding that her abdominal condition distressed her most and desired relief from those symptoms.

Vomiting: This came on periodically every 2 or 3 weeks, lasting over a period of 8 or 10 days. It had no relation to mealtime; it came on spontaneously and was apparently not of the cerebral type. The vomitus was frequently mostly mucous; sometimes bile tinged.

Pain in Abdomen: This came on periodically and was not related to mealtime, but was related to constipation which had been rather obstinate since illness began. The pain frequently preceded the vomiting spells by several minutes but was not relieved by same. The pain was described to be generalized over the abdomen and to be of a cutting and lancenating type.

Headaches: These were frequent and at times very severe when the symptoms of vomiting and abdominal pain were at their height. The headaches were mostly over the frontal and right temporal regions.

Dizziness, backache, pain in chest, numbness of hands and feet, feeling of chilliness and disturbed vision dated back to beginning of disease with periodic remissions and entire disappearances but greatly accentuated at times when the symptoms of vomiting, abdominal pain and headaches were increased in severity.

Appetite had been poor for many months; also sleep. There was no history of urinary disturbances. No cough. There had been some loss of weight during past months. Patient likewise believed that she was not as steady on her feet as formerly.

Physical Findings: Patient moderately well nourished and of sallow complexion. She appeared phlegmatic. Eyes more or less staring. Respirations regular and about 20 per minute. Patient looked sick. Apparent age 38 years.

Inspection.

Eyes: The right pupil was larger than the left; no irregularity in outline. Both eyes reacted to light but sluggishly to accommodation. The Stellway and Von Graefe signs were negative.

Ears: Negative. *Nose and throat* negative. *Mouth*: Pyorrhea present, tongue heavily coated and breath offensive.

Neck: No thyroid enlargement; no other glandular enlargements.

Chest: Respiration normal. Maximum cardiac impulse fifth interspace on left and ½ inch internal to mid-clavicular line. Cardiac impulse regular; no retraction of intercostal spaces over precordia.

Abdomen: Regular in outline, no visible peristalsis; no sign of tumor mass.

Extremities and lips slightly cyanosed.

Temperature normal.

Palpation.

Pulse 120 per minute, regular, and of good quality.

Eyes: Some discomfort when producing moderate pressure over eyeballs.

Lungs and Heart: Negative.

Abdomen: Generalized tenderness, especially over region of gall bladder in epigastrium and over ovarian regions.

Liver and Spleen: Not palpable; neither the kidneys. No palpable tumor mass discernible.

Pelvic and Rectal: Examination negative.

Percussion.

Lungs and Heart: Negative.

Abdomen: Liver and spleen not enlarged; no abnormality found.

Auscultation: Lungs negative. Heart: Slight systolic murmur at apex, well compensated.

Neurological examination not mentioned under Inspection, Palpation and Percussion was as follows:

Gait: Patient had tendency to fall to the right. Romberg sign negative. Slight rigidity of neck. Tongue: slight deviation to the right; no tremor. Tremor of fingers negative. Spasm of any muscle or group of muscles not discernable. Knee—jerks doubtful as patient could not be

made to relax completely. Elbow—jerks negative. Ankle—Clonus negative. Babinski sign negative. Skin negative to touch and temperature sense. Vision blurred especially when changing from the recumbent to the upright position. With the right eye could not see objects at 8′ distance. Hearing not impaired.

Special Findings: October 30, 1920. Urine straw colored. Specific Gravity 1030, Acid in reaction. Negative for Sugar, Albumin, Indol and Diazo. Microscopical examination showed some pus and epithelial cells.

Blood Pressure: One hundred and forty systolic; 115 diastolic. Pulse regular and of good quality; 120 per minute.

Blood: Hg 85%. Reds 4,420.00. Whites 8400. Polys 60. Small lymphocytes 30. Large lymphocytes 10.

November 1, 1920: Examination of stomach contents. Ewald test meal.

Nothing characteristic of abnormality.

Microscopical examination negative.

X-Ray findings of abdomen negative, likewise of skull.

Widal Reaction: Negative.

Wassermann: Reaction reported negative.

Spinal Puncture was performed this day, not for therapeutic but for diagnostic purposes. The patient was placed in bed lying on right side with knees well drawn up, back bowed and the left shoulder well forward. Twenty c. c. of bloody fluid which was under considerable pressure was withdrawn, and Wassermann reported negative. (It is believed that the needle pierced a blood vessel before entering spinal canal.) Patient was restless for few hours following puncture but improved considerably during succeeding 12 to 24 hours.

November 4, 1920. Eye-ground examined by ophthalmologist and reported as follows:
"Ophthalmoscopic examination of both fundi show marked choking of both discs of about equal degree in both eyes of 3 diopters."

November 10, 1920. Spinal Puncture performed again with patient in bed and in position as on previous puncture. About 25 c. c. of clear fluid under considerable pressure removed. A minute or two following this spinal puncture the patient collapsed, becoming very pale, extremities became cold and cyanotic, radial pulse small, rapid and scarcely palpable and the patient seemed to be in danger of dying. Strychnin 1/20 gr. given at once intravenously and patient soon rallied. She felt greatly improved during succeeding 10 to 12 hours.

Examination of spinal fluid reported as follows: "Wassermann test made with the specimen of spinal fluid from the case of Mrs. E. S. was negative (tr. to 6 c. c.) Gold sol. weakly positive middle dil not syphilitic type. R. J. and Noguchi positive." No pus cells were present. A careful search for tubercle tracilli gave negative result, but many diplococci (not intracellular but extracellular) were found. No other bacteria present. Number of white cells six (6).

A diagnosis of basilar brain tumor, probably gliomatous or glio- sarcomatous in character was made at this stage of the findings and surgical interference was advised. The patient refused operation and was desirous of returning home which she did on the following day November 12, 1920.

During the succeeding weeks she was seen at her home and treated symptomatically. There was slow but progressive loss of strength during the 4 weeks of her stay at home but still the patient was able to be out of bed the greater part of the day. Patient was urged to return to the hospital for surgical interference, and, consenting, she was readmitted on December 8, 1920.

Operation December 10, 1920 by Doctor C. A. Evans of Milwaukee. Right temporal decompression about 2½ by 2 inches in diameter. Puncture of right lateral ventricle and about 4 ounces of clear fluid which was under considerable pressure was removed. Brain congested and under great pressure. No tumor discernable. Closing of wound with difficulty owing to bulging. The first few hours following the operation the patient did very poorly, respirations being about 5 per minute, and she was very cyanotic, pulse 110 to 120 per minute but regular and of fair quality. The following day patient did well and continued to improve during the remainder of her stay in the hospital except that her sight seemed to become more and more impaired. Examination of eye ground by ophthalmologist on December 18, 1920, showed following: "Right eye: Extrinsic muscles normal, except insufficiency of external rectus. Pupil dilated and immobile. Papillitic (choked disc) 4 diopters. (1 1-3 mm.) of pale color. Vision nil. Left eye: Extrinsic muscles

normal. Pupil reacts sluggishly to light and accommodation. Papillitic, but not so marked as right eye. Vision not carefully taken but able to recognize people."

On December 22, 1920 patient left the hospital much improved except as to her vision. During the following weeks the patient felt fairly comfortable being practically always free from distressing symptoms but growing progressively weaker. A marked hernia developed at the site of operation during the weeks succeeding the operation, vision was eventually totally lost, short periods of hallucinations developed during terminal stage and the patient finally succumbed March 2, 1921.

Autopsy March 3, 1921: Cranial cavity exposed in usual manner. Contents carefully removed. The brain was somewhat congested and considerable free fluid encountered in cranial cavity. A tumor mass the size of a small orange was found on the right side immediately below the tentorium and lying between the cerebellum and medulla. The tumor was hard and could readily be shelled from adjacent tissues. No evidence of infiltration found. It apparently sprung from the cerebellum. Specimen sent to pathologist was reported upon as follows: "These sections are composed of spindle cells running in all directions. Many of the cells are branched; the blood vessels are immature, their walls being formed by condensation of spindle cells. *Diagnosis*: Glioma."

Summary.

I believe that this case taught several interesting things, namely:

1. Error in diagnosis by competent men through failure, no doubt, of obtaining sufficient historical data and clinical findings.

2. The dangers attendant upon lumbar puncture and the withdrawal of large amounts of fluid, especially in cases of brain tumor.

3. The advantages of surgical interference though tumor may not be removable.

NEWER ASPECTS OF SOME NUTRITIONAL DISORDERS.

Alfred F. Hess, New York (*Journal A. M. A.*, March 12, 1921), reviews current views on vitamins and their relation to nutritional disorders, especially scurvy and rickets. Speaking of the use of cod liver oil in the treatment of rickets, he says: "It is recognized as a drug which benefits nutrition, but the fact that it has unequaled value in the prevention and cure of rickets is hardly realized." It is possible to rid any locality of rickets by means of the use of cod liver oil. There are approximately 125,000 children in New York City between the ages of 3 and 15 months, the period of greatest susceptibility to rickets. If we estimate generously that the families of one-third to one-quarter of these children are unable to purchase cod liver oil, and if we agree that the development of rickets may be prevented by giving a teaspoonful three times a day, then, at the present cost, rickets could be practically abolished in this city by the expenditure of about $150,000 a year. This is merely one of many instances in which the community does not get the full benefit of medical knowledge. Studies of the deficiency diseases have served to illustrate in a most convincing manner the intimate relationship of nutrition to infection, and have led to attributing increased significance to the former. Indeed, the chief clinical importance of disorders of nutrition seems to be associated with the fact that they bring about an abnormal condition of the tissues which renders them more susceptible to the invasion of bacteria or their products. Veterinarians and farmers are well aware that faulty nutrition leads to fatal infections. This "nutritional-infectious" aspect has been convincingly illustrated on a large scale among the peoples of the Central Empires, who during the many years of the war suffered from various forms of malnutrition. The general impairment of health was most strikingly manifested both in adults and in children by the great spread of tuberculosis and its increased mortality.

ARTERIOSCLEROSIS AND CARDIOVASCULAR DISEASE.

Five hundred consecutive complete necropsies were selected by William Ophüls, San Francisco (*Journal A. M. A.*, March 12, 1921), to study the interrelation between certain infectious diseases and the later development of arteriosclerosis or of the syndrome of cardiovascular disease. This investigation again brought out strikingly that there is no direct relation between the extent and severity of the arterial disease and the amount of functional disturbance in the cardiovascular system. The special involvement of certain vascular territories, like that of the kidneys, also did not seem to be of any particular importance in this connection. Arteriosclerosis and hypertension are, therefore, rather loosely associated phenomena, possibly connected with each other by their common relation to certain infections, which at times may produce merely a severe functional reaction on the part of the arteries, at times marked anatomic lesions in them, or both severe lesions and marked functional derangement. The only really tangible connection between arteriosclerosis and chronic nephritis seems to be their common etiology, their interrelation in this regard being very similar to that between arteriosclerosis and hypertension.

RELATIVE EFFECTIVENESS OF VARIOUS FORMS OF TREATMENT IN NEUROSYPHILIS.

About fifty patients with neurosyphilis were treated by spinal drainage by John H. Stokes and Earl D. Os-

borne, Rochester, Minn. (*Journal A. M. A.*, March 12, 1921), with a view of ascertaining, if possible, the advantages of this type of medication. Their method consisted of the weekly withdrawal of from 30 to 70 c.c. of spinal fluid from fifteen minutes to one hour following an intravenous injection of arsphenamin. Mercury, in the form of inunctions or the intramuscular injection of a soluble salt, was also employed in every case. The average number of spinal drainage in each case was five, the highest number being nine and the lowest three. On the completion of drainage, the patients were placed on interim inunction treatment and re-examined after intervals of from two to nine months. The somewhat disappointing results led to their being placed on Swift-Ellis-Ogilvie intraspinal treatment. A comparison of the findings on patients receiving spinal drainage in conjunction with arsphenamin intravenously and routine mercurialization, and the findings on patients receiving an equal amount of routine treatment without spinal drainage, demonstrates no superiority in favor of the drainage method. The most immediate change produced by either of these methods of treatment is in the cell count. A transient but marked rise followed by a fall toward normal limits occurred in patients receiving spinal drainage, and we have reason to believe that a similar Herxheimer-like curve of pleocytosis accompanied by transient exacerbation of symptoms occurs in many patients under treatment for neurosyphilis by routine methods. Temporary rise in the cell count early in the course of treatment should not therefore necessarily be regarded as of unfavorable prognostic significance. In ten patients in whom spinal drainage had produced indifferent results, the administration of arsphenamized serum intraspinally some months later produced what appeared to be more satisfactory and more permanent results.

GALLBLADDER DISEASE.

Donald S. Adams, Worcester, Mass. (*Journal A. M. A.*, March 12, 1921), analyzes the results of operations on the gallbladdder. Of 135 patients on whom a cholecystostomy was performed, 71.8 per cent are well; 18.4 per cent are improved and 9.8 per cent remain unimproved. Of 70 cases of cholecystectomy, 82.8 per cent of the patients are well; 10 per cent are improved and 7.2 per cent remain unimproved.

RESULTS OF OPERATION FOR VARICOCELE.

During the period immediately preceding and after the entrance of the United States into the World War and while recruiting was in active progress, a large number of operations for varicocele were performed on young men in order to permit their entrance into the Army or Navy. As a result of one of these operations in which the ligation of the veins was followed by the development of a hydrocele, a suit for alleged malpractice was brought. A search of the American literature at this time, in order that the highest medical authorities on the subject might be quoted, revealed the fact that modern textbooks on urology and on general surgery fail with one exception to recognize the frequency of this complication. John Douglas, New York (*Journal A. M. A.*, March 12, 1921), after a study of the end-results of 303 operations for varicocele at St. Luke's Hospital, reached these conclusions: The operative treatment of varicocele is frequently followed by hydrocele. Of a total of 303 operations, seventy-six patients were examined, thirty of whom, or 39 per cent, had a hydrocele; forty reported by letter or telephone, and of these seven, 17 per cent, stated that hydrocele had developed. Of the total of 106 patients examined or reporting by letter, thirty-seven, or 35 per cent, had hydrocele. Four, or about 4 per cent, had atrophy of the testicle, and there were two recurrences of the varicocele. The operation should not be performed except in those cases of very large varicocele giving marked symptoms in a non-neurasthenic patient—certainly not in the type of cases previously referred by the various medical examining boards for admission to the Army or Navy. If the operation is undertaken, the frequency of hydrocele as a complication should be explained to the patient as a protection to the operating surgeon. In the performance of the operation every care should be taken to avoid trauma to the veins of the cord, and to prevent hematoma or even slight infection, and thus to limit thrombosis and also to avoid the ligation of the spermatic artery as well as the artery of the vas.

ACIDEMIA IN CHRONIC NEPHRITIS.

Beaumont S. Cornell, Brockville, Ont. (*Journal A. M. A.*, March 12, 1921), says, in a discussion of noncardiac dyspnea, that for the purpose of distinguishing it from heart dyspnea, two observations are helpful: it has no accompanying cyanosis, and it is speedily removed by the administration of sodium carbonate by mouth. From a study of more than 100 cases of chronic nephritis made by the author, it is apparent that various degrees of this dyspnea occur. Some patients (5 per cent) show none at all. The majority have it, but not sufficiently to complain of it. Perhaps a fifth of them will mention it; and, finally, in about 5 per cent of cases it is the most distressing symptom. On what factors the degree of the dyspnea depends is uncertain. No doubt the degree of acidemia and the degree of sensitiveness of the respiratory center are cardinal considerations. But, beyond these again, why should the blood of a nephritic be unable to rid itself of the acids of exercise as quickly as the blood of a normal individual? The explanation probably does not lie in the fact of lowered renal excretion, because (as seen above) the 50 per cent patient may be as dyspneic as the 16 per cent patient. The practical value of clinical detection of acidemia is twofold: (1) *In Early Diagnosis.*—A syndrome of lumbar pain, frequency (day or night) and dyspnea of noncardiac origin is suggestive of incipient nephritis, even in the absence of albumin. Noncardiac dyspnea is a very early symptom in nephritis and has frequently led me to prolong the search for albumin with ultimate success, even though the albumin was absent as long as two weeks. (2) *In Treatment.*—The physician will fre-

quently meet a nephritic whose distressing dyspnea fails to respond to digitalis; he has no cyanosis or cardiac enlargement or signs of cardiac decompensation. To this patient sodium bicarbonate (pure) in sufficient doses gives prompt relief. So far as I know, there is no contraindication to its use. The only caution, perhaps, should be not to render the urine alkaline for too long a period, thereby facilitating phosphatic deposits.

PREVENTIVE MEDICINE

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THE MICROSCOPIC DIAGNOSIS OF GONORRHOEA.

BY W. D. STOVALL M. D.

The methods used for the diagnosis of gonorrhoea can be classified as clinical, microscopical and serological. They are not equally important in all cases. Their relative importance varies according to the stage of the disease, acute or chronic, and the sex of the patient.

It is not my purpose to discuss the clinical aspects of gonorrhoea. I wish to discuss the microscopic examination of pus smears as an aid to the diagnosis of gonorrhoea. The serological diagnosis is yet in the experimental stage, and will not be considered here.

The clinical diagnosis is probably the most used. I believe that it is a quite common practice to consider all purulent discharges from the male urethra as proof positive of gonorrhoea. As a rule this is a correct assumption but occasionally it leads to error. There are other infecting organisms which may invade the mucous membrane of the urethra and occasionally produce the clinical manifestations of gonorrhoea. Stained smears collected from such cases show a great deal of pus and instead of the gonococcus a Gram positive organism. The absence of gonococci, the presence of a Gram positive organism occurring practically alone, and intracellular, indicating that there is a positive chemotactic action between these organisms and the leucocytes certainly offers strong evidence that the infecting organism is Gram positive and not Gram negative, therefore not the gonococcus.

Any one of these factors taken alone is of little value for establishing a negative diagnosis to gonorrhoea. The mere absence of gonococci in the presence of much pus does not mean that the patient has not a gonococcal infection. In my study of a large number of slides showing the Gram positive intracellular organisms and no gonococci, I have not found gonococci on subsequent examinations.

On account of this finding I have come to question the use of methylene blue as a stain for smears collected from suspected cases of gonorrhoea. Frequently I have found that these Gram positive intracellular organisms have a morphology which can not be distinguished from that of the gonococcus. The methylene blue stain in such cases show an intracellular diplococcus. The only way, therefore, by which these organisms can be distinguished from the gonococcus is by the Gram stain.

If one always requires that organisms have the typical distribution or grouping described for the gonococcus it is possible that a positive diagnosis to gonococci will be avoided under the circumstances described above, but it is certain that many cases of gonorrhoea will slip by undiagnosed by the microscope if only intracellular organisms showing characteristic grouping are recognized as gonococci. It is not always possible, in fact quite frequently impossible, to find gonococci as well groped as the textbooks usually describe them. They are found singly and in pairs, intracellular and extracellular.

Methylene blue is used probably much more for staining pus smears than the Gram stain. It is seen though how one may often be misled by using this stain. It is my opinion that methylene blue should never be used. The Gram method of staining is the only method which can be used with satisfaction.

The acute case in the male usually offers very little difficulty. If the case is seen early the organisms will probably not be intracellular but Gram negative diplococci, tangled in mucous threads will be found which no one experienced in the work could mistake.

The chronic cases are much more difficult to diagnose. In these cases the discharge is often slight and it is frequently hard to secure enough to make a satisfactory smear; the organisms are few, in fact, absent entirely from some of the smears and other organisms, usually Gram positive, are present to confuse the diagnosis. One examination negative to gonococci in such cases

has relatively little significance. The old form of the Gram positive organisms lose their stain by the Gram method, and often are hard to differentiate from gonococci. The old forms of gonococci are atypical and are hard to identify. Altogether the diagnosis of these cases is difficult, and if added to these difficulties the smears are poorly made, the microscopic examination becomes of little value.

Too little attention is paid to the method to be used for securing smears. With the difficulties already enumerated it is obvious that if the pus is not collected with care and the smear made properly the result of the microscopic examination becomes worthless as an aid in the diagnosis of these cases.

To keep other organisms out of the smear as much as possible the external part should be cleaned with permanganate of potash and the meatus wiped out with cotton saturated in the same solution. There is usually too little discharge to make a satisfactory smear, in which case the prostate must be massaged, and the secretion thus expelled into the urethra milked out. If this material is not smeared in an even, thin smear over the surface of the slide, a satisfactory stain can not be made.

Too frequently the physician relies upon the microscopic finding alone. The absence of gonococci often decides the diagnosis. The difficulties in the way of the microscopic examination make it apparent that this examination if negative can not be accepted as decisive. The percent of positive results which can be expected from microscopic examination depends upon whether the case is acute or chronic, whether the patient is male or female, the way in which the specimen has been collected and prepared, and upon the experience of the person who makes the examination. The percentage of positive examinations will be much higher in acute cases than in chronic cases, in smears made from male cases than those from females. The acute cases in the male will give a much higher percent of positive examinations than the acute cases in the female. During the six months period from July, 1920, to January, 1921, in the State Laboratory we examined 756 smears for gonococci. These smears were from both male and female patients and included acute and chronic forms of the disease in both classes of patients. Of these 756 smears examined, 499 were negative, 193 were positive, 60 were suspicious, and 4 unsatisfactory. We called no smear, no matter how poorly made, unsatisfactory if it was possible to make any sort of an examination. This indicates that a little over 38% of the smears examined were positive.

It has been pointed out that the diagnosis of gonorrhoea from smears obtained from female patients is much more difficult than from smears obtained from male patients. This is true in both the acute and chronic forms of the disease. To properly interpret the value of the microscopic examination in these cases the following sources of error, which enter into the examination must be kept in mind. (a) The organisms are often so few as to escape detection; (b) these smears frequently are literally swarming with other bacteria some of which are Gram positive and many of which are Gram negative. The Gram negative diplococci resemble the gonococcus so closely in morphology and staining characteristic that they can not be differentiated in the stained preparation. This is particularly true of smears prepared from vaginal secretion, and that is why the "vaginal smear" is so unsatisfactory. (c) Gonococci are often atypical. (d) Error in making a Gram stain can easily creep in.

It is apparent then that even under the most favorable conditions the examination of pus smears collected from female patients for the diagnosis of gonorrhoea results in many negative results, and unless the proper interpretation can be made of such results they are very misleading. Not only will the results be negative but actual error in identifying the organism may occur. Norris and Mickelberg (1) cite a case of vulvovaginitis in a child which was first diagnosed gonorrhea because of the presence in stained smears of a Gram negative diplococcus which morphologically and in staining reaction resembled the gonococcus. Subsequent examinations proved this organism to be Diplococcus Catarrhalis. The same authors have reported their results from the examination of a number of smears. They have divided their cases into acute and chronic. Their published result is given as follows:

[1]Diagnosis of Gonorrhea in the Female by Staining Methods. Their Practical Value. Charles C. Norris and Henry B. Mickelberg. J. A. M. A.; 1-15-21; Vol. 76, No. 3, p. 164.

Analysis of Seven Hundred and Ninety-four Examinations from Cases Presenting Clinical Evidences of Gonorrhea.

	Positive	Negative	Total
1. All cases except those comprising Section 4:			
Acute	54	9	63
Chronic	27	180	207
Total	81	189	270
2. From the gynecologic dispensary of the Hospital of the University of Pennsylvania:			
Acute	22	6	28
Chronic	9	106	115
Total	31	112	143
3. Private cases:*			
Acute	32	3	35
Chronic	18	74	92
Total	50	77	127
4. Cases showing the advantage of preliminary irritation:			
(a) Cases with preliminary chemical and traumatic irritation:			
Chronic	20	44	64
(b) Cases (from Section 1) with no preliminary chemical or traumatic irritation:			
Chronic	27	180	207
Vulvovaginitis.			
5. Children and infants (all cases except those in Section 7):			
Acute and chronic	169	230	399
6. Private cases:			
Acute	37	4	41
Chronic	31	69	100
Total	68	73	141
7. Cases showing results of a preliminary irritation compared with the ordinary method of securing material:			
(a) With preliminary chemical and traumatic irritation:			
Chronic	28	33	61
(b) Cases (from Section 6) with no preliminary irritation:			
Chronic	31	69	100

*Compared with Section 2, Section 3 emphasizes the advantage of care in this work. In nearly all the cases in Section 3 the material was obtained, stained and examined by one of the authors. Special effort was made to obtain material from the depths of the glands, and a number of slides were examined before the smears were pronounced negative. In this series there were a certain number of what may be termed doubtfully positive results: i. e., specimens that contained organisms suggestive of gonococci, but not entirely typical. These have been classified under the negative group, although they are generally treated as if they were positive. Numerous pus cells, especially in the absence of many microorganisms, are always suggestive of gonorrheal infection.

It is not easy to properly collect from the female a specimen to be examined for gonococci. The simple "vaginal smear" will rarely show gonococci. They may be there but are overlooked because of the large number of other organisms present. In these cases smears should be made of discharge from the urethra, cervix and Bartholin glands. The external parts should be well cleaned, pus expressed from the urethra and smeared in an even thin film over the surface of a glass slide. Stevens and Heppner (2) say that the best smears are obtained from the cervix after thoroughly cleansing the canal, and compressing the anterior and posterior lips between the blades of a bivalve speculum. It frequently is possible to demonstrate gonococci in discharges right after menstruation even though all previous attempts have been negative.

It is obvious then that the diagnosis of gonorrhoea from the stained smear may be difficult and at times impossible. Because of these difficulties and unavoidable errors I have adopted a method of reporting the results of these examinations, which is an attempt to reduce error to a minimum. The smears are classified into one of four groups. These groups are: 1. Positive, those showing gonococci; 2. Suspicious, those in which gonococci are not found but which show 50% of pus cells or

[2]Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin. William E. Stevens, M. D., and Maurice Heppner, M. D., San Francisco. The Journal of the American Medical Association, Nov. 27, 1920, Volume 75, No. 22, page 1477.

more; 3. Observation, those showing no gonococci but 25% of pus or more; 4. Negative, those showing no gonococci and no or but few pus cells. Smears should be made from the first three groups every week until negative results are obtained. Smears should be made from the negative results upon the slightest suspicion.

When the state and national government undertook the problems of venereal disease control they realized that some method would have to be described which would make it possible to say when a patient infected with gonococci was no longer infectious. The microscopic method for diagnosis was recognized as being of considerable value especially in acute cases, and in chronic cases when gonococci could be found. They also realized that there would be many cases of gonococcus infection in which gonococci would not be found by the microscopic examination and still further that treated cases which were considerably improved clinically would furnish smears in which gonococci would be so scarce that they would be overlooked or for other reasons already enumerated missed. The problem then was what requirements must be met before a case can be with reasonable safety discharged as cured or at least as no longer in the infectious stage. To satisfy this condition the Surgeon General of the United States Public Health Service published the directions quoted below:

MALES.

Before discharging cases as noninfectious, the following four requirements must be met:

1. Freedom from discharge.
2. Clear urine; no shreds.
3. The pus expressed from the urethra by prostatic massage must be negative for gonococci on four successive examinations at intervals of one week.
4. After dilation of the urethra by passage of a full-sized sound, the resulting inflammatory discharge must be negative for gonococci.

FEMALES.

1. No urethral or vaginal discharge.
2. Two successive negative examinations for gonococci of secretions of the urethra, vagina, and the cervix, with an interval of 48 hours and repeated on 4 successive weeks.

(This rule is laid down as the best practical method at our disposal at present, but it is fully realized that such negative findings may not in every instance be conclusive as to freedom from infection, and the patient should be requested to return at frequent intervals for subsequent examination. In fact, all the foregoing rules governing discharge as noninfectious are tentative and will be subject to revision should the combined experience of directors of clinics or others indicate the necessity therefor.)

3. Technic for procuring smears from the cervix and urethra. Slides should be prepared from the secretions procured from the urethra and cervix, as well as from secretions which may be expressed from Skenes and Bartholins glands. In preparing urethral slides the finger should be inserted in the vagina and expression made on the floor of the urethra from within outward, the cotton-tipped probe being then introduced well into the meatus. In procuring smears from the cervix a vaginal speculum should be introduced and the cervix well exposed. All secretions should be mopped away from the external os before taking the smear. After the cervix is well dried, a probe, tightly wound with cotton, should be inserted into the cervical canal and rotated several times. It is exceedingly important that the secretion from the cervix shall be in reality cervical secretion and not mucus or pus from the vagina. It is advised that two or three slides be prepared from both urethra and cervix.

SCARLET FEVER: ITS PREVENTION AND CONTROL.

The State Board of Health is thoroughly aroused by the continued and increased prevalence of scarlet fever in Wisconsin. Each year a heavy toll in child life is exacted while thousands of cases of illness from this disease are recorded. The death rate from scarlet fever in Wisconsin is constantly higher than it is in the registration area of the United States comprising 30 states and 27 cities. In this respect scarlet fever has achieved an unenviable distinction, for the death rates of other transmissible diseases are almost uniformly lower in Wisconsin than elsewhere.

In order that children may be more adequately protected against scarlet fever, increased and more intelligent efforts must be put forth by lay people

as well as physicians, nurses and health officers. These efforts must be directed along several lines:

1. Better enforcement and observation of the rules and regulations governing the prevention and control of scarlet fever.

2. Improved understanding of the manner in which the disease is transmitted and the means of preventing its spread.

3. Wider publicity through newspaper articles, posters, public lectures, and slides in moving picture houses as to the means of preventing scarlet fever.

Rules and Regulations.

Without a thorough understanding and application of the rules of the State Board of Health it is impossible effectively to control scarlet fever. A bulletin dealing with this subject is available for all citizens of the state, lay as well as professional. From the frequency with which the quarantine regulations are flagrantly violated it is apparent that many physicians and health officers are in especial need of a closer acquaintance with authoritative procedure.

Suppressive Work.

The well developed case of scarlet fever is readily recognized. However, the real danger undoubtedly arises from the mild cases, which are frequently not recognized as scarlet fever yet are responsible for the spread of the disease. However, merely because a case is mild is no reason for regarding it lightly. The infection from such a case frequently assumes a most virulent form when communicated to other persons. The vast majority of scarlet fever cases result from contact between the sick and the well. When handled by scarlet fever patients or carriers milk may become infected and cause outbreaks of the disease among the consumers of the product. Milk-borne epidemics are distinctively explosive in character.

The process of discovering the particular person responsible for a case or group of cases of scarlet fever depends upon the fact that the individuals most likely to acquire the disease are those who have been most intimately associated with an actual case. Thus, by determining who were the close associates of the scarlet fever patient it is frequently possible to discover persons with peeling skin, strawberry tongue, sore throat, reddened fauces or discharging ears but whose condition has not previously been recognized as scarlet fever.

In certain mild cases the symptoms have been so slight or fleeting as to have been overlooked. It is entirely possible that these so-called "missed" cases serve as carriers of the disease. In searching for carriers it is well to reinspect patients who have recently been released from quarantine. When such persons show evidence of sore or red throat or discharge from the ear they should be regarded as potential sources of danger.

When scarlet fever is present in a community all suspicious cases should be isolated until a diagnosis can be made. "Isolation first and diagnosis afterwards" is an excellent protective measure. The placarding of homes in which scarlet fever is suspected is also a procedure of distinct value. It is also a wise precaution to obtain nose and throat cultures from scarlet fever suspects in order that the possibility of diphtheria may be determined.

Publicity.

If scarlet fever is to be deprived of its terrors, physicians, nurses, health officers and others engaged in public health work must inform themselves concerning the modern methods of preventing and controlling the disease. Moreover, they must be prepared to advise lay people, particularly families in which the disease is present, concerning the official requirements. It is recommended that the scarlet fever rules be published in local newspapers, together with the material included in the present circular letter. The subject should be discussed in schools and public meetings so that the people may be conversant with the dangers of scarlet fever and the most effective methods of prevention and control. Local health departments are urged to have printed for wide distribution circulars or pamphlets of information on the subject. The possibility of using slides in moving picture houses for arousing the people is also recommended for consideration.

In the following table are shown the annual number of cases and deaths from scarlet fever during the past 11 years. The number of cases reported in 1920 was exceeded but once during this period, in 1917 while the number of deaths were exceeded in 1917, 1912, and 1910.

Years	Cases	Deaths	Death rates per 100,000 population Wisconsin	Registration Area
1910	5045	304	13.0	11.6
1911	4148	225	9.6	8.8
1912	3304	283	11.9	6.7
1913	2806	197	8.2	8.7
1914	3195	215	8.9	6.6
1915	1991	85	3.5	3.6
1916	3981	125	5.0	3.3
1917	7038	245	9.8	4.2
1918	4401	198	7.8	3.0
1919	3766	152	6.0	not
1920	5822	235	8.9	available

The matter of insuring greater protection against scarlet fever is commended to the earnest attention of all right-thinking citizens of the state. The continued sacrifice of innocent lives should no longer be tolerated.

A MATTER OF SECONDS.

What pathologic phenomenon is more distressing to witness, more harassing to the anxious family, more exhausting and agonizing to the patient, than the acute paroxysm of asthma? When the physician is hastily summoned, frequently in the night, to minister to the sufferer, he is expected to relieve him at once, and failure of the means of relief is embarrassing, to say the least. Hence under these circumstances the physician must have an absolutely reliable and efficient agent at his immediate command.

The most available therapeutic agent in the acute paroxysm of asthma is the original Adrenalin Chloride Solution supplied for many years by Parke, Davis & Co. A hypodermic injection of a few minims of Adrenalin Solution promptly relaxes the bronchial spasm, supports the heart, stabilizes the vaso-motor mechanism, and produces a calm, restful respite from the tumultuous, exhausting efforts of Nature to maintain the respiratory function.

Adrenalin is preferable to morphine because it does not narcotize the patient nor lock up his secretions. Furthermore, it is said that the asthmatic attacks do not occur at such frequent intervals under Adrenalin treatment as when anodynes are employed. The action of Adrenalin is startlingly prompt, and the effect has often been described by witnesses as magical—a much abused term, perhaps, but one that expresses the mental estimate of this remarkable drug by those who have had the good fortune to actually see what its effect is in such cases.

Suprarenalin (Epinephrin), the astringent, hemostatic and pressor principle of the Suprarenal or Adrenal Gland as isolated by the Armour Laboratory is again available in various forms—crystals, solution 1:1000 and ointment 1:1000.

Suprarenalin Solution is stable, uniform and non-irritating. It is supplied in 1 oz. g. s. bottles with the popular cup stopper.

The beauty of Suprarenalin Solution is that it is free from chemicals and if protected from the air will remain clear and potent for a long time.

Suprarenalin Solution is the stand-by of the eye, ear, nose and throat men.

SEX AND BLOOD PRESSURE.

It has long been realized that age is a factor which must be taken into consideration in giving an answer as to what constitutes the normal arterial blood pressure. There are also variations that seem to be associated with sex. In examining the numerous data collected by Alvarez at the University of California, it appears that the women before the menopause represent almost exclusively a type endowed with a comparatively low pressure. There is far greater uniformity and less variation in the blood pressure readings of large numbers of them than is true of men at the same periods of life. Alvarez has therefore suggested that perhaps the ovary is in some way able "to cover up or hold latent the tendency to hypertension which we will presume the women inherit equally with the men." When the ovarian function fails, therefore, the natural tendency for the appearance of higher arterial pressures soon makes itself appreciated. Perhaps this hypothesis will help to explain the assertion sometimes made that hypertension often develops early in women who show signs of insufficient ovarian function, such as scanty and painful menstruation, sexual anesthesia, male distribution of body hair, infantile uterus, etc. At any rate, the phenomena of hypertension appear to be suppressed in women as long as the ovaries function well. On the other hand, the statistics show that the large increase in the incidence of hypertension comes ten years later in men than in women. Apparently, Alvarez concludes, a strenuous life has less to do with this disease than has the quieting down of the sexual functions.—*Jour. A. M. A.*, Nov. 27, 1920.

MILK AND THE SUBTLE MENACE OF "PATENT MEDICINE."

Like other secretions in the body, the milk is likely to contain a variety of substances which happen to be adventitious or casual constituents of the blood from which, in ultimate analysis, the components of the mammary product must be derived. It has long been known that milk may accordingly include "foreign" substances in solution. Not only can it acquire a foreign taste from some peculiarity of the food of the lactating animal, but compounds which pass into the milk by this natural path of glandular secretion may be of a character liable to produce untoward effects in those who consume it. Alkaloids, such as those contained in opium, alcohol and small quantities of salts of metallic elements, for example, have been recorded to occur in the milk of woman after these substances have for some reason found entrance into the maternal

organism. As infants are susceptible to far smaller doses of toxic agents than are adults, the danger of introducing injurious substances in milk into the organism of the nursing child is one that must be reckoned with. How real the menace may be is well illustrated by a case recently reported by Van Der Bogert.[1] The discovery of a painful papulopustular eruption in a nursling 6 months of age led to the suspicion of bromin poisoning, whereupon the element was actually discovered in samples of the mother's breast milk. The source of the danger to the child was not far to seek. The lactating mother, a person of exceedingly nervous temperament, had become addicted to the use of a widely advertised proprietary remedy, "Miles' Restorative Nervine." This nostrum was investigated in the A. M. A. Chemical Laboratory in 1916 and was found to be essentially a solution of bromids in sugar syrup, flavored with oil of lemon and cloves, and preserved with sodium benzoate.[2] We have rehearsed a familiar story of secrecy, self-medication—and suffering, on the part of the innocent. Further comment is unnecessary.—*Journal A. M. A.*

THE PANDEMICITY OF ENCEPHALITIS.

Encephalitis in its most recent exacerbation appeared first in Austria in 1917, and reached France and England in the Spring of 1918, Italy and the eastern half of the United States toward the end of 1918, Portugal in February, 1919, the Pacific Coast of America in October, 1919, India in November, and Spain in the early part of 1920. While these facts as to the appearance of outbreaks of the disease are known, there are no accurate statistics as to the exact case incidence of the pandemic. Information published in the reports of the British Ministry of Health, of the Department of Hygiene of the French government and by the United States Public Health Service indicates that the disease is quite prevalent throughout the world. These reports, however, emphasize more than anything else the necessity for making the occurrence of this disease reportable. The collection of accurate statistics regarding the incidence of such a disease is fundamental to its prevention and control.—*Journal A. M. A.*

No. 114, S.] [Published April 15, 1921.

CHAPTER 122, LAWS OF 1921.

AN ACT to amend section 4075 of the statutes, relating to evidence of physician and surgeons.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. Section 4075 of the statutes is amended to read: (Section 4075) No person duly authorized to practice physic or surgery shall be permitted to disclose any information which he may have acquired in attending any patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician or to do any act for him as a surgeon; but as a witness in his own behalf he may disclose such information in any civil action brought by such patient or his legal representative to recover damages for malpractice in such professional attendance, and also in any criminal prosecution for such malpractice, whenever such patient or his legal representative shall have first given evidence relating to such information; AND ALSO WHEN THE PATIENT OR THOSE AUTHORIZED TO BRING AND WHO DO BRING ACTIONS FOR PERSONAL INJURY IN CASE OF THE PATIENT'S DEATH PERMIT THE PHYSICIAN IN WRITING TO DO SO.

Section 2. This act shall take effect upon passage and publication.

Approved April 13, 1921.

COPY LAW.

FAITH.

The greatest word in any language is—FAITH.

It is the fundamental principle of all religion—the foundation of all business.

Without faith all would be chaos.

Governments, courts, banks, and the institution of the family would go down in ruin.

Nearly all the unhappiness that mortals know is due to its arch enemy—fear.

Washington had faith at Valley Forge—Lincoln at Gettysburg—Roosevelt had boundless faith in the American people.

To believe in something with all your heart—to be absolutely without fear of obstacle, courageous in the face of envy, and smiling at defeat until it turn to victory.

That is faith.

To every man and woman in the world whose confidence and good will we enjoy, we owe an obligation—to safeguard their faith.

To every person whose good fortune depends upon our good faith, we are gravely responsible—to treasure that faith.—*Jordan Motor Car Co., Inc.*

STATE LAWS CONCERNING CHILDREN.

In view of the number of States in which children's code commissions are at work, the U. S. Public Health Service calls attention to a recent report by the National Child Health Council, which recommends certain provisions that are apt to be overlooked.

Most important of all it urges that all restrictions on local expenditures for the health of mothers and children should be repealed and that definite facilities for the education of prospective mothers, their protection in industry, and the supervision of their health should be definitely authorized.

The State health department should be authorized to license and supervise all midwives and to require the immediate reporting of all inflammatory conditions of the eyes of the new born and their proper treatment. Births, including still-births, should be promptly reported to local registrars under the health department. All maternity homes should be licensed and supervised.

Supervised pasteurization of all uncertified milk and

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[1]Van Der Bogert, Frank: Bromin Poisoning Through Mother's Milk, Am. J. Dis. Child. 21:167 (Feb.) 1921.

[2]Propaganda Department, J. A. M. A. 67:827 (Sept. 9) 1916. Reprinted in Pamphlet "Epilepsy Cures" published by the American Medical Association.

its proper handling, etc., should be required.

Health education should be provided for all school children. It should not prescribe rigid or uniform drill or instruction but should normally stipulate the child's physical development and should include practical instruction in personal hygiene, nutrition, and sanitation. Teachers should be instructed in the fundamental principles of health education. Periodic physical examinations should be made. Special groups who are unable to receive class instruction should not be forgotten. The sanitary condition of school buildings and grounds and their environment should be supervised.

The child in industry should be physically examined when he leaves school, when he changes his work, and periodically while he is of school age.

Each State should have a bureau of child hygiene, which should administer the laws for children. All public and private institutions having to do with children should be subject to regulation by the health authorities. All appropriations for child or maternity care should specifically provide for health.

ATMOSPHERE.

Grieve not, O physician, if thy slender purse
Be not in condition ducats to disburse:
Thou hast something finer, fitter to uphold,
Nobler and diviner, than the love of gold.

Round the good physician love and hope combine,
Making clear his vision thro' the storm and shine;
Skill in thought and action may to joy dispose,
But his satisfaction from his mission flows.

Love and hope are vital as the sun's bright rays,
As the great recital music's soul displays;
He who loves not wanders o'er a misty plain;
He who hopes not squanders all he might attain.

Sordid aim that charmeth hearts no grandeur fires,
Masters not nor harmeth him whose soul aspires.
In what place soever such a soul has trod,
Love of man was never far from love of God.

—R. O.

SYPHILIS AND INSANITY.

That syphilis causes a substantial percentage of existing insanity has long been recognized, but heretofore definite statistics bearing on the subject have been meager. To supply this need the U. S. Public Health Service queried the superintendents of 159 State hospitals for the insane in regard to the number of inmates who had become insane by reason of the disease. Of the 115 replies received, 88 supplied data that could be tabulated; and from this, it appeared that 15.5 per cent of admissions and 6.2 per cent of inmates among the men and, correspondingly, 6.1 and 2.2 per cent among the women were directly due to the disease. The excess in the percentage of admissions over inmates is due to the comparative short life of those who became insane by reason of the disease.

VENEREAL DISEASE AND ACCIDENTS.

One of the largest telephone and telegraph companies in the United States has discovered that compensible accidents that happen to its employes bear a marked relation to the incidence of venereal disease. A large proportion of accidents to linemen, for instance, have been found to mark the beginnings of locomotor ataxia, a diagnosis which is almost always camouflage for syphilis.

QUESTIONNAIRE ON THE SEGREGATED DISTRICT.

Three years ago the segregated district seemed too firmly intrenched in the large cities of the country to be ever dislodged. Today, according to data collected by the U. S. Public Health Service, it has few friends. A questionnaire, sent to the mayors of all large cities with duplicates for reference to prominent men and women citizens and chiefs of police brought 554 replies from 212 cities. The answers to the first three questions, which asked substantially whether houses of ill-fame, in and out of segregated districts, should be tolerated were from 80 to 90 per cent in the negative. Those to the fourth and fifth questions, which asked whether both the woman and the man should be examined medically and placed under surveillance if found infected were from 72 to 78 per cent in the affirmative. Of the 110 to 86 chiefs of police who answered most of all the questions from 89 to 100 per cent voted "right."

INVESTIGATE EUROPEAN IMMIGRATION.

Surgeon J. W. Kerr, of the U. S. Public Health Service, sailed from Europe on November 20 with Commissioner General of Immigration Caminetti to assist in the investigation of emigrant conditions in Europe. The hope is to devise additional measures whereby the immigration laws may be given greater force and yet may work less hardship on prospective emigrants.

BOOK REVIEWS

American Medical Directory. A register of the legally qualified physicians of the United States and Canada and of those institutions, organizations, activities, etc., directly related to the medical profession. 2460 pages, size 8x10½ inches. Price $15.00. American Medical Association, 535 North Dearborn Street, Chicago, Ill.

Lists with data 160,000 physicians, 7,500 hospitals, etc., medical societies, medical colleges, medical journals, medical libraries, lists of specialists, members of special medical societies, medical officers of the United States Army, Navy, Public Health Service, Indian Field Service.

The Directory also gives Authentic Data on Medical Graduation, the Education Qualifications for Medical Practice; Medical Licensure, the Legal Authority for Medical Practice.

The 160,000 names of physicians, with data, are given in geographical order, by state (Alabama to Wyoming) and in addition, U. S. Possessions and Canada. Each state is resectioned by town and the names of physicians in each town are given in alphabetical order. Following this appears a complete alphabetical list of physicians from A to Z. The latter enables one to locate a physician when his address is not known.

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Wood	D. Waters, Grand Rapids	F. X. Pomainville, Grand Rapids.

SOCIETY PROCEEDINGS

FOND DU LAC COUNTY

At the regular meeting of the Fond du Lac County Medical Society held at the Palmer House, Fond du Lac, April 13, Dr. F. S. Wiley gave a talk on public health matters. The discussion was lead by Drs. A. C. Dana and S. E. Gavin. Dr. P. J. Calvy gave a talk on diseases of the lung and exhibited a number of interesting X-ray plates to illustrate same. Twenty-four members of the society were present.

KENOSHA COUNTY

The Kenosha County Medical Society held a joint meeting with the Kenosha County Dental Society at the Elks Club, Kenosha, April first. Dr. Boyd S. Gardner, head of the section of dental surgery at the Mayo Clinic addressed the society on "Dental Sepsis and Focal Infection," illustrating same with lantern slides.

MILWAUKEE MEDICAL SOCIETY

The regular meeting of the Milwaukee Medical Society was held in the society rooms in the Colby-Abbot building, Milwaukee, Tuesday evening, April 12. The meeting was one of the best ever held and numerous clinical cases were presented, as follows: "Primary tumor of the lung," Dr. Louis F. Jermain; "Pulmonary abscess after tonsillectomy," Dr. Frank Murphy; "Malaria developing in Wisconsin," Dr. F. C. Christensen; "Probable tuberculous meningitis with recovery," Dr. F. C. Christensen; "Sprengel's deformity," Dr. H. C. Schumm; "Pylorectomy for linitis plastica," Dr. F. B. McMahon; "Hodgkin's disease," Dr. Robt. Blumenthal; "Hemolytic jaundice six months after splenectomy," Dr. E. H. Mensing; "Scurvy involving the hip joint and ilium," Dr. F. J. Gaenslen; "Radical mastoid operations," Dr. Wm. H. Halsey; "Brain tumor involving the right frontal lobe," Dr. A. I. Rosenberger; "Tumor of the spinal cord," Dr. C. A. Evans; "Military tuberculosis with tuberculosis meningitis and choroidal tubercles," Dr. Hawkins.

The regular meeting of the Society was held April 26, and the following clinical cases presented: "Infarct of the lung," Dr. J. G. Taylor; "Solitary tubercle of the spinal cord," Dr. W. L. LeCron; "Acute lymphatic leukemia with lympho-sarcoma," Dr. A. B. Schwartz; "Interesting cystograms," Dr. W. K. Gray; "Total avulsion of the scalp—repair," Dr. R. G. Sayle; "Actinomycosis," Dr. G. J. Kaumheimer; "Two cases of adeno carcinoma of the uterus," Dr. Carl Davis, and "Cervical pregnancy," by Dr. Roethke.

OSCAR LOTZ, M. D., *Secretary pro tem.*

MILWAUKEE OTO-OPHTHALMIC SOCIETY

The Milwaukee Oto-Ophthalmic Society met at the University Club, Milwaukee, April 19, at six-thirty o'clock. Dinner was served after which Dr. Gordon B. New of the Mayo Clinic and Dr. Harry S. Gradle of Chicago addressed the members.

OUTAGAMIE COUNTY.

The April meeting of the Outgamie County Medical Society was held at the Y. M. C. A. Building, Appleton, April 22, following supper at six-thirty. The usual good attendance of its members was manifest and an excellent program on the following subjects was given: "The Prostate," by Dr. H. Schaper, Appleton; "Toxemia of Pregnancy," by Dr. F. O. Brunckhorst, Hortonville, and "Leukemia," by Dr. J. J. Laird, Black Creek. A discussion by all the members present followed the reading of these papers.

V. F. MARSHALL, M. D., *Secretary.*

TWIN CITY MEDICAL AND DENTAL SOCIETY

The regular monthly meeting of the Twin City Medical and Dental Society was held at the Hotel Menasha, Wednesday evening, April 6. Dinner was served at 6:30, followed by an unusually interesting program, one number of which was a paper read by Dr. G. H. Williamson of Neenah.

ASSOCIATION NEWS

OFFICIAL CALL.

To the Officers, Fellows and Members of the American Medical Association:

The seventy-second annual session of the American Medical Association will be held in Boston, Massachusetts, from Monday, June the sixth to Friday, June the tenth, Nineteen Hundred and Twenty-one.

The House of Delegates will convene on Monday, June the Sixth.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, June the seventh at 8:30 P. M.

The various sections of the Scientific Assembly will meet Wednesday, June the eighth, at 9 A. M. and at 2 P. M. and subsequently, according to their respective programs.

WILLIAM C. BRAISTED, *President.*
DWIGHT H. MURRAY,
Speaker, House of Delegates.

Attest:
ALEXANDER R. CRAIG, *Secretary.*
Chicago, Illinois, April ninth.

MONTHLY MEDICAL AND SURGICAL CLINIC FOR PHYSICIANS.

To the Editor:

It should be a matter of interest, especially to the younger physicians of the city and vicinity, to know that on the second Thursday of each month from 8 to 12 o'clock the staff of St. Joseph's Hospital conducts a

general medical and surgical clinic in the hospital amphitheatre which has a comfortable seating capacity for more than a hundred visitors. All physicians are welcome to attend.

Respectfully,
CHESTER M. ECHOLS,
Director for the Staff.

FOUNDATION FUND—TRI-STATE DISTRICT MEDICAL SOCIETY.

A COMMUNITY TRUST FUND FOR THE ADVANCEMENT OF POST-GRADUATE MEDICAL EDUCATION BY UNIVERSITY EXTENSION COURSE DIRECTLY TO PROFESSION IN SMALLER COMMUNITIES OF IOWA, ILLINOIS AND WISCONSIN.

By HENRY G. LANGWORTHY, M. D.,
DUBUQUE, IOWA.

The Tri-State District Medical Society of Illinois, Iowa and Wisconsin at its Rockford, Illinois, meeting in September, 1919, unanimously voted to adopt a definite plan for raising a Foundation Fund for the society, and appointed a general chairman and a large splendid representative committee of forty-five members from the three states to raise it. Recognizing the difficulty of doing the bigger practical things for the profession without sufficient funds the society at once centered the best business, banking, legal and professional brains possible on its problem and from such conferences arranged by the general chairman, originated a definite plan and started a Foundation (Endowment) Fund of ultimately not less than $100,000, the income of which would gradually enable the society to carry out at least one of its chief aims, namely a practical university extension course in post-graduate medicine directly to the profession in the smaller communities of Illinois, Iowa and Wisconsin.

THE FOUNDATION FUND.

A Modern Community Trust.

A brief explanation of this form of modern community trust for the advancement of medical science and preventive medicine in the smaller cities of the three states will be of interest.

First: The Foundation Fund offers a distinct, definite and permanently safe place to which any physician desiring to further post-graduate medical education may donate a sum of money, either large or small, and feel that the income from that sum will go forward with many others like it, to do its part for the benefit of the profession and humanity as well.

Second: Through the establishment of the Foundation Fund the physician is now more fully warranted than in the past in creating his own individual endowment, as it were, with the positive assurance that his own gift will be brought into immediate and real usefulness through the broad powers of the representative Board of Trustees who act as the committee of administration and expenditure for the society.

Third: The Foundation Fund plan as adopted will avoid the possibilities of partial failure sometimes seen in cases of either under-endowment or in gifts with hampering or fixed restrictions and covers particularly that condition of constant change in our medical outlook by recognizing that the medical problem of the practicing physician of each decade "can be better solved by the best minds of that decade rather than through the medium of some dead hand of the past."

Fourth: The Foundation Fund already well started is made up of the smaller gifts of many active physicians from all sections of the three states as a truly democratic American medical community fund. The purchase of a "life membership" in the society by the payment of two hundred dollars is but another way in which the physician may not only donate to a splendid cause, but at the same time personally enjoy all the benefits of the society as well. Subscriptions for such purposes may be made payable in installments over a period of one year if desired.

Fifth: Finally, the Foundation Fund of this society offers the clear opportunity for the physician of smaller means, without direct descendants, or one of large means also, after having properly cared for his own, to thoughtfully provide that a small portion of his estate shall remain intact in the Foundation Fund of the Tri-State District Medical Society of Illinois, Iowa and Wisconsin as a memorial trust fund, the income of which assists the permanently carrying on of the splendid educational work of the association. The present officers and trustees of the society are as follows:

Officers.

Honorary President of Clinics, Dr. Geo. W. Crile, Cleveland, Ohio.

Honorary President, Dr. James R. Guthrie, Dubuque, Iowa.

President, Dr. Geo. V. I. Brown, Milwaukee, Wis.

President-Elect, Dr. John E. O'Keefe, Waterloo, Iowa.

Vice-President, Wisconsin, Dr. Joseph S. Evans, Madison.

Vice-President, Illinois, Dr. Edwin P. Sloan, Bloomington.

Vice-President, Iowa, Dr. Walter L. Bierring, Des Moines.

Managing-Director, Dr. William B. Peck, Freeport, Illinois.

Secretary-Treasurer, Dr. Domer G. Smith, Freeport, Illinois.

Board of Trustees.

Dr. John Van Reed Lyman, Eau Claire, Wis.
Dr. Wilson Cunningham, Platteville, Wis.
Dr. Arthur G. Sullivan, Madison, Wis.
Dr. Donald McCrae, Council Bluffs, Iowa.
Dr. John F. Herrick, Ottumwa, Iowa.
Dr. Henry G. Langworthy, Dubuque, Iowa.
Dr. Edw. W. Fiegenbaum, Edwardsville, Ill.
Dr. Clifford U. Collins, Peoria, Ill.
Dr. James McDonald, Aurora, Ill.

Chairmen of the Foundation Fund Committee.

Dr. Henry G. Langworthy, General Chairman, Dubuque, Iowa.

Dr. Roland Hazen, Paris, Ill.
Dr. E. L. Rohlf, Waterloo, Iowa.
Dr. W. E. Fairfield, Green Bay, Wis.

Subscriptions are requested from the medical profession and others interested. It is hoped that every physician in the three states will give something. Checks should be made out to the Foundation Fund of the Tri-State District Medical Society and not to any person. Any further information regarding the trust will be gladly furnished by the above trustees or officers of the society, or by the general chairman.

The foregoing briefly embodies the society's community trust fund for the profession. That it is boldly and very successfully beginning to put into practical execution these plans, one has merely to ask almost any physician to be fully convinced. The fund already well started by donations to the amount of several thousand dollars has been placed by the trustees in the care of the Federal Deposit and Trust Co. of Dubuque, Iowa, as the financial secretary under the strict controlling trust laws of the State of Iowa. The income will be used to defray such society expenses as are considered proper by the board and the entire fund is under the full control at all times of the board of trustees elected annually by the society for varying terms and composed of three physicians from each state. The society is now asking the financial support of every member of the profession in order to complete its initial endowment of not less than one hundred thousand.

NEWS ITEMS AND PERSONALS

Dr. C. J. Nedry has left the Medford Clinic and is now associated with Dr. C. W. Wilkowski of Chippewa Falls.

Three men claiming to be physicians were arraigned before Judge Burgess, Racine, charged with practicing medicine without a license. The men, J. H. Emmons of Milwaukee, Ernest BeHagen and A. W. Mallick of Chicago, took rooms in a hotel and advertised they were ready to perform surgical operations on defective eyes. After having performed several operations, a complaint was made, and BeHagen and Millick were fined $100 each, the case against Emmons being dismissed.

Plans for the establishment of a joint municipal and state public health laboratory in Beloit have been completed with the securing of the services of Walter Ashby, health service expert who has been doing similar work for the University of Arizona. This laboratory is one of the six sub-laboratories established in the state by the State Board of Health under the direction of the main station at Madison.

An addition is to be built to St. Mary's Hospital at Columbus, which will house nine patients.

Major J. R. Bryant, M. D., of Wausau has been appointed by the Adjutant General to form a 128th regimental medical detachment of the Wisconsin National Guard in that city.

Dr. Charles H. Nims, who has practiced in Oshkosh for thirteen years, has gone to Hot Springs, Arkansas, where he will reside. Dr. Nims will be associated with a group of physicians in the Thompson Building and will limit his practice to Roentgenology.

Dr. A. A. Drill will retire as chief of Staff of Emergency Hospital, Milwaukee, June first and will engage in private practice.

Dr. Otho Fiedler has been chosen as president of the Kiwanis Club recently organized in Sheboygan.

The physicians of West Allis have organized the West Allis Physicians and Surgeons Association. Dr. F. R. Wright has been elected president, Dr. S. C. McCorkle, vice president, and Dr. E. W. Maechtle, secretary. The object of the association is to promote better co-operation among the local physicians and to study matters pertaining to the general public health.

The directors of Columbia Hospital, Milwaukee, announce that more than $4,000 was raised on its annual donation day, Easter. The contributions will offset any deficit that may be incurred through the hospital's charity work. This amounted to $15,000 in 1920.

The new hospital built by Drs. P. J. and A. M. Christofferson of Waupaca has been completed and is ready for occupancy.

By unanimous vote, the members of the La Crosse County Medical Society decided to refrain from writing liquor prescriptions under the Volstead act for gain. The action followed the reading of a transcript of proceedings here in United States court when Judge Landis examined local physicians alleged to have written prescriptions freely.

Dr. A. J. Somers of Chicago has located in Chippewa Falls and will specialize in diseases of the eye, ear, nose and throat.

Dr. R. L. Prees of Cambria has been placed in full charge of the clinical and pathological laboratories of the Madison General Hospital.

The monthly staff meeting of the Holy Family Hospital, Manitowoc, was held Tuesday evening, April 5. After the regular business was transacted, Dr. L. M. Warfield of Milwaukee gave an interesting lecture on "Blood Pressure—Its Aid in Making Diagnoses."

A trunk, containing surgical instruments, a typewriter, a razor and several other articles, shipped from Racine April 10, 1918, to Dr. Wm. P. Salbreiter, in care of the first sanitary squad, 32nd Division, France, was delivered to him March 19th in Racine after having traveled thousands of miles and being held in custom houses in the United States, France and England for days. The articles in the trunk were in the same condition as when placed in it three years ago.

Dr. G. F. Goggins, formerly of Wrightstown, has located in North Fond du Lac and is occupying the offices of Dr. F. M. Harris who left recently to join the Minahan Clinic at Green Bay.

At a recent staff meeting of the St. Mary's Hospital, Green Bay, Dr. W. W. Kelly was elected president of the executive staff. Dr. H. H. Hendrickson was elected vice-president and Dr. R. L. Cowles, secretary. After the business session and banquet, Dr. A. J. Patek of Milwaukee addressed the physicians on "Diagnosis of Diseases of the Stomach."

Major Benjamin B. Rowley, United States Army, resigned, resumed practice in Milwaukee May 1st. He is associated with Dr. Eugene A. Smith, 445 Milwaukee St., Colby-Abbot Bldg., and will limit his practice to Neurology.

The Wisconsin Anti-Tuberculosis Association began in May a four month's training course for nurses desiring to enter public health work. The compulsory county nurse law, which makes it mandatory for every county in the state to have a public health worker by July 1, will increase the demand for such workers, officers of the association say. Only 41 of the 71 counties now have such employes.

DEATHS

Dr. H. A. Meilike of Clintonville died Tuesday, March 18, after a long illness. Dr. Meilike came to this country from Germany, being a native of Prussia, where he was born in 1854. He attended the University of Greifswald and in 1873 joined the regular army in which he served one year. In 1876, he came to the United States and opened a drug store in Clintonville, remaining in this business until 1882. At this time, he left for the University of Minnesota and later entered the College of Physicians and Surgeons, Keokuk, Iowa, from which he graduated in 1887. He then practiced in Lexington, Kentucky, for a year, after which he located in Clintonville where he remained until the time of his death.

Dr. Meilike was a member of the State Board of Health for fifteen years and years ago was a member of the State Medical Society of Wisconsin and the Northwest Medical Society.

Dr. Henry T. Connor died suddenly in the office of Dr. F. T. McHugh, Chippewa Falls, April 23. He was born in Kilbourn City in 1861 and attended St. John's College at Prairie du Chien. He graduated from Rush Medical College, Chicago, in 1882, after which he practiced medicine at Wilson, Wisconsin, for a year, then practiced at Bloomer for two years and at Chippewa Falls for six months. He then located in Superior where he practiced until 1914, then retired from practice and went west. He returned to Chippewa Falls in July, 1920, where he resided until the time of his death.

Dr. Willis V. Buckley of Hartford died March 26, after an illness of over a year, at the age of 38 years. He was born in the town of Hartford in 1882, and in 1905 graduated from the Oshkosh Normal School and for four years was principal of the north side school of Hartford. He graduated from Marquette University school of medicine in 1915 and practiced in Milwaukee for a number of years. At the time of his death, he was a member of the Green Lake-Waushara-Adams county, Wisconsin State and American Medical Associations.

Dr. George W. Hochrein, a resident of Fond du Lac for many years and a native of Glenbeulah, died at Mercy Hospital, Chicago, March 20. Dr. Hochrein was born in 1879 and graduated from the Northwestern University school of medicine in 1906. After serving internships at both the Mercy Hospital, Chicago, and the State Hospital, Topeka, Kansas, Dr. Hochrein became associated with Dr. John Murphy of Chicago, and upon Dr. Murphy's death he continued Dr. Murphy's office and practice. He was a member of the Illinois State and American Medical Associations.

Dr. George R. Hill died at his home in Kendall, March 18, after a long illness. Dr. Hill was born at Shanksville, Pa., in 1852, and graduated from Bennett Medical College, Chicago, in eclectic medicine and surgery in 1910. He was a member of the Wisconsin State Eclectic Medical Society, the Illinois State Eclectic Medical Society and the National Eclectic Medical Society.

Dr. George L. Smith died suddenly of cerebral hemorrhage at his home in Jefferson, April 16, at the age of 66 years. Dr. Smith was born March 12, 1855, at Henderson, New York, and came to Jefferson when a boy. While a young man, he was engaged in the retail drug business with the late Dr. W. W. Reed of Jefferson. He entered the Rush Medical College from which he graduated in 1879, and then located in Jefferson where he practiced until his death. He was a member of the Jefferson County, Wisconsin State and American Medical Associations.

BOOK REVIEWS

Dream Psychology. By Prof. Sigmund Freud, M. D. Translated by M. D. Eder. The James McCann Co., New York. 283 pp. 1920.

This work presents for the more general reading public Freud's psychology in the master's own words. It is simply written and published in a form easily read by beginners, yet not too elementary for those more advanced in psycho-analytic study. The book is especially timely just now when there has been such a public awakening and interest manifested in Freud's work, previous volumes having been too technical for general reading. There is a distinct need for a volume of this character at this time and we predict for it a cordial and popular reception.

The Medical Clinics of North America (Issued serially, one number every other month) Volume 4. number 5. By New York Internists. Octavo of 344 pages, with 58 illustrations. Per clinic year (July, 1920, to May, 1921). Paper, $12.00 net; Cloth $16.00 net. Philadelphia and London: W. B. Saunders Company.

THE JOURNAL BOOK SHELF

NEW BOOKS WORTH WHILE

Traumatic Surgery. By John J. Moorehead, B. S., M. D., F. A. C. S. Philadelphia and London: W. B. Saunders Co. 1920.

Mental Self-Help. By Edwin Ash, M. D. 119 pp. New York: The MacMillan Co. 1920.

The Adolescent Girl. A Study from the Psycho-Analytic Viewpoint. By Phyllis Blanchard, Ph. D., with a preface by Dr. G. Stanley Hall. New York: Moffat, Yard & Co. 242 pp. 1920.

The Psychology of Functional Neuroses. By H. L. Hollingworth, M. D., Associate Professor of Psychology, Columbia University. D. Appleton & Co., New York. 256 pp. 1920. Price, $2.00.

Psychology and Psychotherapy. By Wm. Brown. M. A., M. D., University of London. New York: Longmans, Green & Co. 196 pp. 1921.

Tuberculosis of Children. By Prof. Dr. Hans Much, University of Hamburg, Germany. Translated by Max Rothschild. New York: The MacMillan Co. 156 pp. 1921.

Dream Psychology. By Prof. Sigmund Freud, M. D. Translated by M. D. Eder. New York: The James McCann Co. 283 pp. 1920.

Rational Treatment of Pulmonary Tuberculosis. By Charles Sabourin, M. D., Medical Director of the Durtol Sanatorium, France. Authorized translation. 6th edition. 440 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $3.50.

Eye, Ear, Nose and Throat Nursing. By A. Edward Davis, A. M., M. D., and Beman Douglass. 2nd edition, revised. 32 illustrations. 345 pp. Philadelphia: F. A. Davis & Co. 1920. Price, $2.50.

Practical Psychiatry and Psychology. By C. B. Burr, M. D. 5th edition. Revised and enlarged. Illustrated. 269 pp. Philadelphia: F. A. Davis & Co. 1921. Price, $2.00.

Mother and Child. By Edw. P. Davis, A. M., M. D., Professor of Obstetrics, Jefferson Medical College. 4th edition. 278 pp. Philadelphia: J. B. Lippincott & Co. 1921. Price, $2.75.

Epidemic Respiratory Disease. By Drs. E. L. Opie, F. G. Blake, James C. Small and T. M. Rivers. Illustrated. 402 pp. St. Louis: C. V. Mosby Co. 1921. Price, $6.50.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M. D., Attending Surgeon to the City Hospital and to St. Bartholomew's Hospital, New York City. 3d edition, entirely reset. Octavo of 894 pages. 892 illustrations, mostly original. Philadelphia and London: W. B. Saunders Co. 1921. Cloth, $8.00 net.

Transactions of the College of Physicians of Philadelphia. 3d edition. Vol. 41. Containing the papers read before the College from January, 1919, to December, 1919, inc. Published in part by the income from the Francis Houston Wyeth fund.

Keen's Surgery. Edited by W. W. Keen, M. D., LL. D., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 855 pp. 359 illustrations, 17 in color. Philadelphia and London: W. B. Saunders Co. 1921.

Regional Anaesthesia. (Victor Pauchet's Technique.) By B. Sherwood Dunn, M. D., Officer D'Academie, Surgeon Service de Santé Militaire de Paris. 224 figures in the text. Philadelphia: F. A. Davis & Co. 1921. Price, $4.00.

A Textbook of Pathology. By Wm. G. MacCallum, M. D., Professor of Pathology and Bacteriology, Johns Hopkins Univ. 2nd edition, thoroughly revised. Octavo volume of 1155 pages. 575 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $10.00 net.

The New Psychology and Its Relation to Life. By A. G. Tansley. 283 pages. New York: Dodd, Mead and Co. 1920.

The Anatomy of the Nervous System. From the Standpoint of Development and Function. By Stephen W. Ranson, M. D., Ph. D., Professor of Anatomy in Northwestern Univ. Medical School, Chicago. Octavo volume of 395 pages. 260 illustrations. Philadelphia and London: W. B. Saunders Co. 1920. Cloth, $6.50 net.

The Wassermann Test. By Charles F. Craig, M. A., M. D., F. A. C. S., Lt. Col., M. C., U. S. A., Professor of Bacteriology, Army Medical School, Washington, D. C. Second edition, revised and enlarged. Illustrated with colored plates, halftone plates and 61 tables. St. Louis: C. V. Mosby Co. 1921. Price, $4.25.

The Major Symptoms of Hysteria. Fifteen lectures given in the medical school of Harvard Univ. By Pierre Janet, Ph. D., M. D., Professor of Psychology in the College de France. 2nd edition. New York: The MacMillan Co. 1920.

Practical Tuberculosis. A textbook for the General Practitioner and those Interested in Tuberculosis. By Herbert F. Gammons, M. D., Superintendent Woodlawn Sanatorium, Dallas, Tex. St. Louis: C. V. Mosby Co. 1921.

American Red Cross Work Among the French People. By Fisher Ames, Jr. New York: The MacMillan Co. 1921.

BOOK REVIEWS

Psychology and Psychotherapy. By Wm. Brown, M. A., M. D., University of London. Longmans, Green & Co., New York. 196 pp. 1921.

The author states an endeavor to show the psychological principles underlying the modern theory and practice of psychotherapy. Especially interesting are the author's sane ideas of the Freudian theory, accepting and giving credit for what is good but not accepting Freud's theories in their entirety. Part four of the work, which is devoted to the psycho-neuroses of the war and written from the English standpoint with a wealth of clinical material available, is especially well written

and a worth while contribution to the literature on the subject. The work will be of especial interest to those specializing in nervous diseases.

Tuberculosis of Children. By Prof. Hans Much, University of Hamburg, Germany. Translated by Max Rothschild. The MacMillan Co., New York. 156 pp. 1921.

This volume is well translated and presents the results of the co-ordinated efforts of Dr. Much and Professor Deyckie of Hamburg, representatives of the world's leading tuberculosis therapists. The assertions of the value of their latest discovery of the part of antigens are most emphatic and if they can be varified by other therapists, they have given to the world a method of treatment which equals in its importance any medical discovery made during the last century. The work is rather advanced reading on the subject and an accurate estimate of its real value will have to be reserved at this time.

The Surgical Clinics of North America. (Issued serially, one number every other month) Volume 1, number 1. By Philadelphia Surgeons. Octavo of 259 pages, with 112 illustrations. Per Clinic Year (February to December): Paper, $12.00 net; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

The Medical Clinics of North America. Volume IV, Number 4 (Philadelphia Number, January, 1921). Octavo of 355 pages, 37 illustrations. Philadelphia and London. W. B. Saunders Company, 1921. Published Bi-Monthly. Price per Clinic year: Paper, $12.00. Cloth, $16.00.

Keen's Surgery. Volume VII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 855 pages, with 359 illustrations, 17 of them in colors. W. B. Saunders Company, 1921.

This supplementary volume of Keen's System of Surgery is a most practical and satisfactory treatise on some of the most interesting surgical problems that have been before the surgical profession of all times, but especially so at the present time. Its authors are men of international reputation in many instances, some of them write from a rich wealth of material that has grown out of their surgical experiences during the last war, and it is a volume that constitutes a ready reference to a large number of practical subjects. It is scarcely possible to select from the twenty-four chapters those to be especially commented upon as it would be an injustice to the others. Anthrax, gas gangrene, shell shock, blood transfusion, gun-shot fractures, injuries to the spinal cord, and to the peripheral nerves, and the military surgery of joints and its orthopedic surgery are especially interesting, and lay before you the experience and knowledge of some of our best surgical talent and patriots.

This volume can be used not only as an adjunct to the other volumes of Keen's Surgery, but is of great value as an independent text. It is one of two supplementary volumes that are to come out as another monument to Dr. Keen's surgical and literary editorial skill.

F. B. M.

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M. D., late Lieut-Colonel, M. C., U. S. A., Attending Surgeon to the City Hospital; and to St. Bartholomew's Hospital, New York City, Consulting Surgeon to the Nassau Hospital, Mincola, L. I. Third Edition, Entirely Reset, Octavo of 894 pages, with 892 illustrations, mostly original. W. B. Saunders Co., Philadelphia and London. 1921. Cloth, $8.00 net.

This is the third edition of a most deservedly popular and valuable work. Dr. Morrow has given us a book accessible for ready reference giving the procedures employed in diagnosis and treatment. They are every-day practical procedures which the busy practitioner may be called upon to perform at any time and, to the best of our knowledge, this is the only single book which furnishes for immediate reference information of this kind.

The plan of the book comprises, first, a description of certain diagnostic and therapeutic methods and, second, a description of those measures employed in the diagnosis and treatment of diseases affecting special regions and organs of the body. Each procedure has been given in detail, leaving nothing to the reader's imagination. The work is richly illustrated and so plainly that the reader may grasp at a glance the technique of the various procedures.

The third edition has been carefully brought up-to-date and has received a general revision. New material has been added and additional illustrations have been supplied. We do not know of a more valuable work to have within reach for ready office reference nor of a work which will be more frequently consulted, especially by the general practitioner. It is again most highly recommended.

Traumatic Surgery. By John J. Moorehead. B. S., M. D., F. A. C. S. W. B. Saunders Co., Philadelphia and London. 1920.

The second edition of Dr. Moorehead's work on Traumatic Surgery has been carefully rewritten and many new drawings have been added. There is also a new chapter dealing with standardized first aid methods as relating to industrial surgery. Dr. Moorehead states the main idea in writing the book has been the placing in one volume all the information necessary to diagnose all the usual and most of the unusual effects of accident and injury.

The gradual development during the past years of industrial surgery as a distinct branch of medicine makes especially valuable this book for this class of practitioner though, of course, it is equally needed by all men doing general practice. The lessons taught during the recent war have furnished abundant material for changes and additions to the previous publication. The work covers such subjects as shock, dislocations, fractures, foreign bodies, burns, injuries due to electricity, the traumatic neuroses, X-ray burns, spe-

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cial injuries and the medico-legal phase of the entire subject.

The work is well illustrated and the reproductions of X-ray plates are the finest we have seen. It is a splendid work on the subject and is highly recommended.

Mental Self-Help. By Edwin Ash, M. D. 119 pp. The MacMillan Company, New York. 1920.

This little work covers in its various chapters self help in sickness, the foundation of health, mind and health, self control, self suggestion in theory, self suggestion in practice and right and wrong thinking. The object of the book is to summarize in a practical way responsible methods of obtaining self help through the exercise of the patient's own mental powers. It is an interesting little book especially intended for the psychoneurotic.

New and Nonofficial Remedies, 1921, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1921. Cloth. Price, postpaid, $1.50. Pp. 418+XXXII. Chicago: American Medical Association, 1921.

New and Nonofficial Remedies contains descriptions of proprietary medicines which are offered to members of the American medical profession. These descriptions are critical and trustworthy. They are based in part on investigations made by, or under the direction of, the Council on Pharmacy and Chemistry and in part on information supported by evidence submitted by the manufacturer or his agent. Statements made by those interested in the manufacture or marketing of preparations must be supported by substantiated evidence or conform to generally accepted facts before such statements are accredited in the acceptance of the article for N. N. R.

This volume contains descriptions only of those proprietary and nonofficial products whch are in accord with the principles underlying the rules for the acceptance of products formulated by the Council. These principles provide that the quantitative formula of the article must be declared, the therapeutic claims made in advertising (or in marketing), the article must be true and the preparation must have, or give promise of having, therapeutic value. Physicians may be guided by the information contained in this book in determining whether or not these proprietary preparations are indicated in the treatment of their patients. The interest of their patients as well as of the physicians themselves will be safeguarded by following the suggestion made in The Journal of the American Medical Association (Helping the Council of the American Medical Association, Nov. 6, 1920, page 1275) and by giving no consideration to any proprietary medicinal agent which has not been accepted and announced in New and Nonofficial Remedies.

A feature of the book which is of especially practical value is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the iodin preparations, the arsenic preparations, the animal organ preparations, the biologic products, etc., each are preceded by a general, thoroughly up-to-date discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations shall supplant.

New and Nonofficial Remedies is revised thoroughly each year. In the present edition, especial pains have been given to the introductory articles on local anesthetics and on arsphenamin preparations and on radium and its application in surgery and in medicine.

Under "References to Proprietary and Unofficial Articles not found in N. N. R." are listed references to published articles dealing with preparations which have not been accepted. These include references to reports of the Council on Pharmacy and Chemistry, to reports from the American Medical Association Chemical Laboratory and to articles appearing in the Propaganda for Reform Department of The Journal. All this information is helpful in determining the therapeutic value of proprietary preparations which are not accepted for New and Nonofficial Remedies.

New and Nonofficial Remedies, 1921, will be sent postpaid by the American Medical Association, 535 North Dearborn Street, Chicago, on receipt of one dollar and fifty cents. The purchasers of this book are also entitled to receive the supplements which are issued from time to time during the year.

The Adolescent Girl. A Study from the Psycho-Analytic Viewpoint. By Phyllis Blanchard, Ph. D., with a preface by Dr. G. Stanley Hall. Moffat, Yard and Co., New York. 242 pp. 1920.

This is a splendid little work from the psychoanalytic viewpoint and should be helpful to young women and girls in solving certain perplexing sex questions. As Dr. Hall says in his preface, the work is particularly for the careful attention of all women interested in the true status of their sex in the world. This is always a more difficult problem for women than for men and their is certainly a real and very vital need for such a book as Dr. Blanchard's. There can be no greater social problem than the adolescent girl and this work will be helpful to all striving to solve this problem.

The Psychology of Functional Neuroses. By H. L. Hollingworth, M. D., Associate Professor of Psychology, Columbia University. D. Appleton & Co., New York. 256 pp. 1920. Price, $2.00.

This work of Dr. Hollingworth's presents the late developments and experiments in the psychology of functional neuroses, a subject given far too little attention by medical men not specializing in nervous diseases. A greater understanding of the subject on the part of medical men would make less quackery and less patronage for the various medical cults. In this work, the author presents clearly and simply the current descriptions of the neurotic constitution. He covers the Freudian psychology in the light of systematic psychology. In the second part of the book, much data is given with case analyses of over a thousand psychoneurotic individuals in the Plattsburg Army Hospital.

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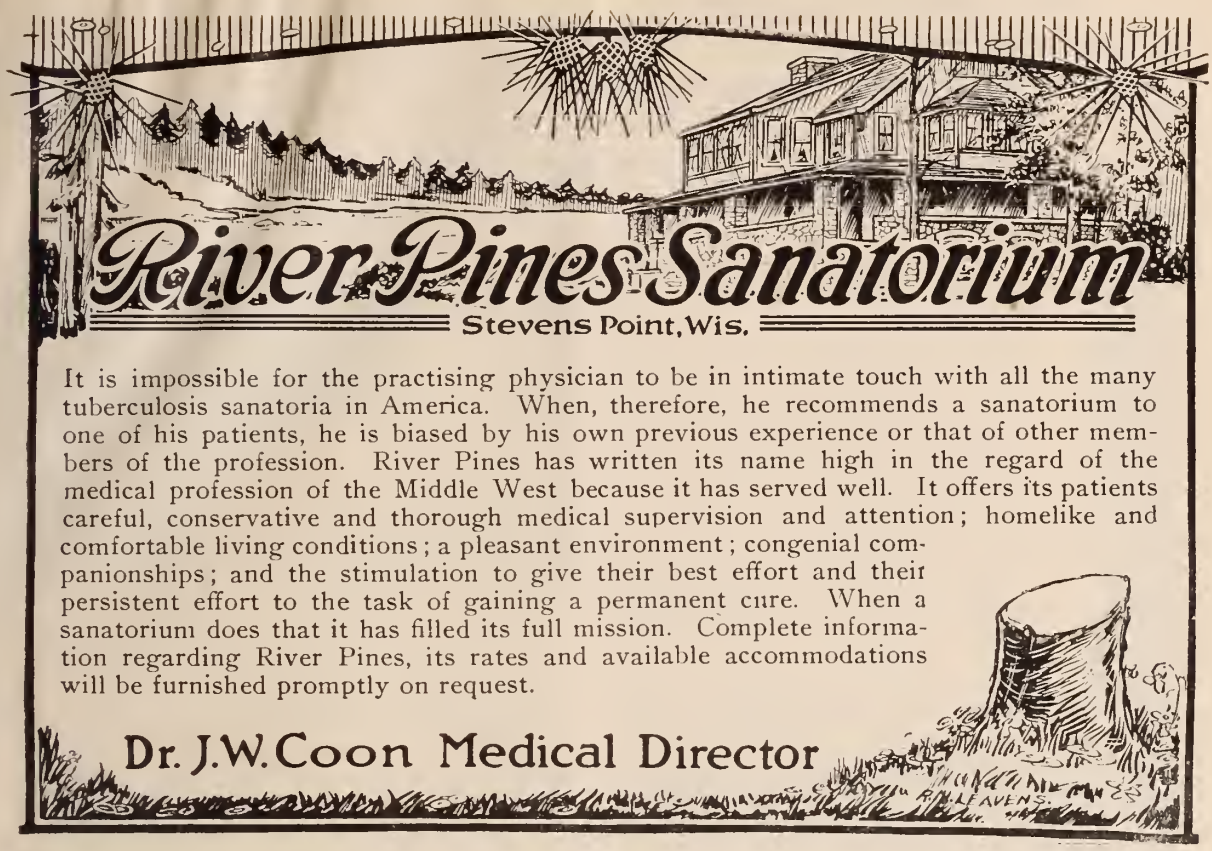

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THERAPEUTIC NOTES

The medical and dental profession of the United States will be interested to know that the Frank S. Betz Company of Hammond, Ind., who recently opened a complete exposition and sales room at 6 and 8 West Forty-eighth St., New York City, has purchased the entire stock and business of the Crown Surgical Instrument Co., located on Eighth Avenue near Forty-ninth St., and will retain the services of the entire Crown Surgical Company's organization, including Mr. A. G. Roberts, who will manage the new Betz Store at 6 and 8 West Forty-eighth St.

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That's pep!
To meet each thundering knock-out blow,
And come back with a laugh, because you know
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His Wife—"We can only hope for the best, dear."

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STATE MEDICAL SOCIETY OF WISCONSIN — MEDICINA NUSQUAM NON EST

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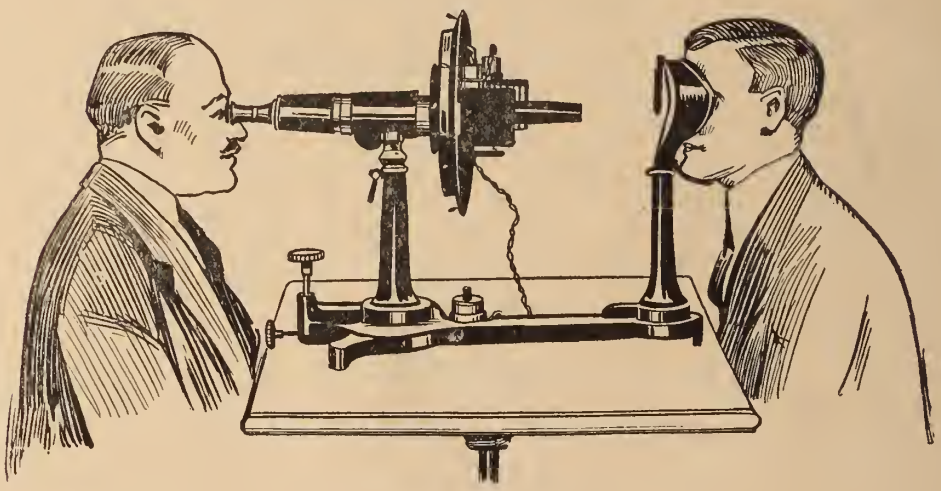

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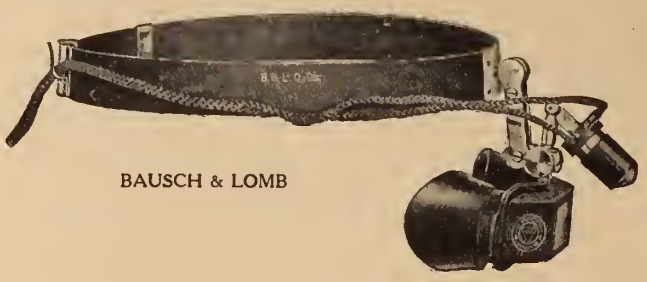

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